

INCREASING COMMUNITY AND FAMILY PARTICIPATION IN CHILD WELFARE AGENCIES AS A
WAY TO IMPROVE FAMILIES' USE OF HEALTH SERVICES

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ABSTRACT

Mónica Pérez Jolles: Increasing Community and Family Participation in Child Welfare Agencies as a Way to Improve Families' Use of Health Services
(Under the direction of Rebecca Wells)

Background.

Many families in contact with child protective service agencies do not receive needed health services. Agencies have used community and family participatory practices as a way to improve services for families. We lack a better understanding of variation in these practices and on whether they improve health service use among caregivers and children.

Conceptual Framework.

The socio-technical systems framework underscores agency characteristics of the work environment as factors associated with variation in agency practices and agencies' ability to reach their goals.

Research Objective.

This research is divided into three studies: The first examines the association between agency characteristics related to quality-oriented culture, flexibility in procedures and caseworker strain on agency use of community review boards, and formerly served caregiver participation in planning/policy groups. The second study tests whether caregivers from an agency with these boards and/or planning/policy groups are more likely to be served through a participatory decision-making service practice. Finally, study three compares caregiver and child physical and mental health service use between caregivers served through a participatory practice and those who did not experience it.

Methods.

All study analyses are drawn from the National Survey of Child and Adolescent Well-Being (NSCAW). Multivariate logistic regressions incorporating weights and the complex survey design of the data as well as the implementation of propensity scores to address selection bias in study three are used to test the proposed associations.

Findings.

In the first study, agency characteristics did not explain variation in agency use of community review boards or caregiver-based planning/policy groups. In the second study, caregiver participation in planning/policy groups was surprisingly negatively associated with caregiver inclusion in decision-making during service planning. In the last study, caregiver inclusion in participatory decision-making did not predict child health service use.

Implications.

Caregiver and family member inclusion in the discussions leading to decision-making during service planning meetings is a promising strategy for increasing health service use among children in contact with a CPS agency, especially among Hispanic children.

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LIST OF ABBREVIATIONS

CPS	Child Protective Service
NSCAW	National Survey of Child and Adolescent Wellbeing
PDM	Participatory Decision Making

CHAPTER I: INTRODUCTION

“Who knows what is best for the people if not the people themselves?”

Merkel-Holguin, L. (2004)

Organization of the Dissertation

Chapter I presents an overview of the research and each proposed aim. This dissertation research has been divided into three distinct chapters, a summary of decision-making in the child welfare context, and a final section on the policy implications of this study. Each manuscript is presented in Chapters II, III, and IV. An overarching conclusion is presented in Chapter V.

Overview of the Research

In the United States, Child Protective Service (CPS) agencies provide or facilitate health services for a growing number of families as a way to ensure children’s safety and well-being (Child Welfare Information Gateway., 2008). CPS agencies are part of state and local departments of social services responsible for receiving reports of suspected child abuse and neglect, determining if the reported information meets the agency guidelines for child maltreatment, and assessing the urgency with which the agency must respond to a report. The main goals of CPS agencies are to: (a) ensure the child’s safety while keeping the child within the family or with family members when possible, and (b) strengthen the ability of families to protect their children and ensure that the child’s social, educational, physical, and behavioral needs are met (Child Welfare Information Gateway., 2008).

CPS agencies provide health services directly or collaborate with local agencies to facilitate those services. Despite CPS agency efforts, many individuals with health needs do not receive services or end services prematurely (Bai, Wells, & Hillemeier, 2009; Burns et al., 2010; Hurlburt et al., 2004; Leslie et al., 2005; Simms, Dubowitz, & Szilagyi, 2000). Low health service use among families served by a CPS agency is particularly troublesome for two reasons. First, child maltreatment has been linked with caregivers’ untreated mental health needs, such as stress and trauma, and the

presence of physical health conditions among children, including developmental delays and diabetes (Casanueva, Martin, Runyan, Barth, & Bradley, 2008; Svensson, Eriksson, & Janson, 2013). Unmet mental health needs among caregivers have also been associated with repeated referrals (“re-referred”) to a CPS agency for potential child maltreatment (English, Marshall, Brummel, & Orme, 1999). Second, health services may not be readily available otherwise because many of these families come from areas characterized by unemployment, cultural isolation, and an inadequate safety net of services such as public hospitals and community health centers (Chow, Jaffee, & Snowden, 2003; Landsverk, Garland, & Leslie, 2002).

CPS agencies are presented with unique opportunities to ensure families’ well-being by, among other tasks, identifying and facilitating timely access to health services for children and their caregivers. Yet these agencies have been described as failing to meet families’ best interests and as uninformed about local communities’ needs and resources (Duncan, Shlonsky, & McLuckie, 2008; Gambrill, 2008; Schorr, 2000; Tilbury, 2004). This likely often limits CPS agencies’ ability to accurately assess children and caregivers’ health care needs and make the best service decisions during their involvement with a family.

The well-being of children in the welfare system has been a focus of policy concern in the United States for some time now (Raghavan R., 2007). Sponsors of child welfare legislation have called for increased participation of community and family members to better inform service-related decisions, and improve family engagement in services (Jones & Royse, 2008). Community members may include local community leaders, child advocacy groups, and/or former caregivers served by a CPS agency. Participatory practices have been encouraged by a renewed view of community members as relevant players in public governance (Collins-Camargo, Jones, & Krusich, 2009). For decades, CPS agencies have taken action by including community members in CPS agency advisory review boards (Collins-Camargo, et al., 2009) and caregivers in service planning meetings (Merkel-Holguin, 2004).

Inclusion of Community Members in Agency Advisory Review Boards

CPS agencies have incorporated input from community members through various community review boards and policy groups. These community review boards are comprised of volunteers who represent the agency’s local community. Volunteers could include individuals with expertise in the

child welfare system and/or caregivers who were previously served by a CPS agency (Bryan, Jones, Allen, & Collins-Camargo, 2007). Community members who are part of these boards meet with CPS agency personnel to review child welfare policies, assess agency performance, and recommend changes to the agency's service practices. The goal of these groups is to improve CPS agency performance and services for families (Ansell & Gash, 2008; Collins-Camargo, et al., 2009). One way for community members to improve agency policy is by sharing information about their communities' needs and priorities with CPS agency personnel. Research suggests that community members' input directly shared with CPS agency management and staff through their participation in review boards positively impacts agency practices and service outcomes for families (Jennings, McDonald, & Henderson, 1996; Litzelfelner, 2001; Wert, Fein, & Haller, 1986).

Inclusion of Caregivers in Decision-Making during Service Planning Meetings

CPS agencies have included caregiver and family members' input in the conversations that lead to decision-making during service planning meetings in two ways. First, some CPS agencies have used a family-centered approach to service practices. Some of these practices are called Family Group Decision-Making, Family Team Conferencing, and the Unity Model. They differ mainly in how they structure the service process with families. In the Family Group Decision-Making service model, the family and the caseworker make collaborative decisions and the service planning process is led by a trained coordinator, who is independent of the CPS case (King, Feltey, & O'Neill, 1998). In the Family Team Conferencing model the family and the child's service team make joint decisions and often the CPS caseworker serves as the team coordinator. Last, within a Unity Model families have a private meeting without service providers to develop a service plan for their child prior to sharing with the service team (Halvorsen, 2003).

All three service practices share the fact that caregivers and family members are given the opportunity to work through their problems and devise solutions based on their own values, cultures, and needs and to share their ideas with caseworkers and local service providers during service planning meetings (Merkel-Holguin, 2004). A family-centered approach to services is considered good practice for improving families' experiences and services during their involvement with the child welfare system (Merkel-Holguin, Nixon, & Burford, 2003). These practices are in contrast to standard

CPS procedures to serve families, which include background checks of the adults living with the child to ensure the child's safety, periodic visits by a case worker to ensure that the child remains in a safe environment at home, and facilitation of voluntary services for the caregiver and/or the child if deemed necessary (Child Welfare Information Gateway., 2008). When and how caregiver input is sought through these standard procedures may depend on the agency's management guidelines and caseworker skillset.

The second way for CPS agencies to include caregivers and family members in service planning meetings is through the inclusion of previously served caregivers in the current family's service team. This practice is expected to improve service engagement for current families for two reasons. First, these previously served caregivers are expected to use their own experiences with the CPS system to guide and better inform the decisions made by currently served families. Second, these formerly served caregivers are likely to be perceived as trustworthy allies who understand currently served caregivers' situation given their own experiences with the service process (Dolan, Casanuevas, Smith, Lloyd, & Ringeisen, 2012).

Community input at these two levels—community review boards and service planning meetings-- have been implemented for decades in the child welfare system. Child welfare scholars have recognized that policies developed within an inclusion approach are more likely to be based on consumer preferences (Irvin & Stansbury, 2004) and that family inclusion is paramount given their role as “active participants in the service experience and largely responsible for the changes sought by the agency” (Patti, 2000, p. 15). Yet three questions remain unanswered:

First, what are the agency factors that make them more likely to use community review boards? Not all CPS agencies across the United States have included community members in their review boards (Collins-Camargo, et al., 2009). We know little about the sources of this variation and what specific agency characteristics make a CPS agency more likely to include community members in their boards. In Aim 1, I apply a socio-technical conceptual framework to test three agency characteristics that are expected to influence CPS agency use of community review boards. This framework contributes to the child welfare research by underscoring the need to consider how

workers experience and perceive their work environment (i.e., agency's social environment) as factors that can support or hinder agency action.

Second, within an agency using community advisory boards, are families more likely to be included in decision-making during service planning? In Aim 2, based on the collaborative governance framework I propose that community participation in CPS agency governance is expected to impact agency policy by permeating service practices with family-inclusion values.

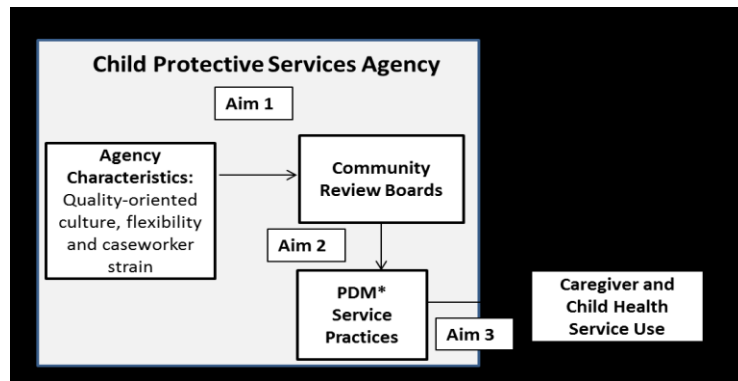
Third, are families who actively participate in decision-making during service planning more likely to use health services when needed? The activities implemented within participatory service practices are expected to increase caregivers' input in decision-making during service planning and collaborative meetings with other professionals (Connolly & McKenzie, 1999; Weigensberg, Barth, & Guo, 2009). The participatory decision-making (PDM) framework is applied in Aim 3 to answer this question. Drawing from the PDM framework, participation in decision-making is expected to facilitate emotional and cognitive processes that likely impact individual behavior—i.e., caregiver health service use in this study. Internal mediational processes were not tested in this study.

The perceived need to address these research gaps is shared by some child welfare researchers who have called for additional studies on the relationship among CPS agency practices, services, and individual outcomes (NSCAW, 2010). An overview of each aim is provided in the following section.

Overview of the Three Studies by Aim

A separate conceptual framework was implemented to examine each aim in this three-paper dissertation research. The three frameworks share an overarching assumption that CPS agency efforts to incorporate community and family input are based on these agencies' shared values of democratic participation and as a way to improve agency performance and service engagement among families served (Halvorsen, 2003; King, et al., 1998; LeRoux, 2009). An overview of the three proposed aims is displayed in Figure 1.

Figure 1. Conceptual Framework



*Participatory Decision-Making

Aim 1: To identify agency characteristics associated with variation in the agency's use of community boards and caregiver-based planning/policy groups. A socio-technical systems framework contributes to this research because it underscores the agency characteristics of the work environment where policies are implemented to identify variation in agency practices (Rousseau, 1977). This framework was applied to support the selection of three agency characteristics related to an agency's social environment as predictors of an agency's use of community boards and caregiver-based policy groups. Proponents of this framework posit that we can better understand how agencies optimize services and reach their goals by considering: a) the agency's core technology (i.e., types of policies and services) and b) how workers experience and perceive their work environment (Cummings, 1978; Rousseau, 1977; Schneider, 1996). Implementation efforts are more likely to be realized within a work environment that guides and supports those efforts (Schneider, 1996).

The first agency characteristic considered in this study relates to the CPS agency culture. Agency culture is defined as "the shared beliefs and values that guide the thinking and behavioral style of individuals" (Garland et al., 2000). Child welfare scholars have argued that certain types of agency culture promote new approaches in the way the agency does business (Cooke & Rousseau, 1988). The type of agency culture considered in this study is one characterized by agency norms and expectations seeking to improve service quality (Glisson, 2002). This service-quality oriented agency culture has been empirically tested in child welfare and found to be significantly associated with caseworker perceived improved service quality (Glisson, 2002).

The second agency characteristic considered in this study relates to the level of agency flexibility in daily tasks and procedures. The use of community boards and caregiver-based policy groups is likely to require a level of agency flexibility. That is, agencies are likely to undergo changes in their routine and procedures to accommodate community members' needs. For example, community members may require additional training in the CPS system and procedures, and such training is likely to require a less technical language than the one used for managers or caseworkers. Agencies characterized by flexibility would be more able than less flexible agencies to change routines and procedures to accommodate community members' needs.

Finally, I proposed that agencies with a lower level of caseworker strain would be more likely to engage community members in their governance. Caseworker strain is defined as caseworkers' aggregated perception that their work environment is too emotionally draining and detrimental to their well-being and success in their work (Glisson & Hemmelgarn, 1998). A less strained workforce is probably more energized and willing to add the necessary tasks to their professional role to make citizen participatory practices happen. Based on the reviewed literature, I have concluded that the proposed associations have not been empirically tested in the child welfare system.

Hypothesis: A higher level of service-quality oriented culture, flexibility in CPS agency service procedures, and a lower level of caseworker strain will increase the likelihood of a CPS agency use of community review boards and caregiver-based planning/policy groups.

Aim 2: To examine the impact of agency use of community review boards and caregiver-based planning/policy groups on caregiver inclusion in participatory decision-making service practices. For the second aim, a collaborative governance framework supports the assumption that the incorporation of community input into a CPS agency's governance could reflect a level of commitment to a participatory and democratic approach to governance (Farmer et al., 2010), which in turn is expected to impact an agency's service practices. This study's main goal is to examine whether community and family participation within a CPS agency increase the likelihood of caregiver/child use of health services. Thus, the unit of analysis for Aims 2 and 3 is the caregiver/child to increase the precision of the models.

For Aim 2, families served through a participatory service model and by a previously served caregiver who were part of the current's family team were compared with families where the caseworker did not identify a participatory service model as being used with the family. It is likely that a family that was not served through a participatory service model, as reported by the caseworker, was served through a standard CPS procedure. This standard procedure is followed by a caseworker once a report is accepted for investigation by the agency and, as a result, a family is deemed in need of services.

We hypothesized that compared to children and caregivers from CPS agencies without community inclusion in agency governance,

Hypothesis 2.1: Children and caregivers from agencies with community review boards and/or caregiver-based planning/policy groups will be more likely to be included in decision-making during service planning meetings.

Agency efforts to increase families' participation may also reflect practices where previously served caregivers are included in the service planning meetings of currently served families. Previously served caregivers are expected to use their own experiences with the CPS system to guide and support currently served families (Dolan, et al., 2012).

Hypothesis 2.2: Children and caregivers from agencies with community review boards and caregiver-based planning/policy groups will be more likely to have previously served caregivers in their service planning meetings.

Aim 3: To assess the impact of participatory decision-making (PDM) service practices on caregiver and child physical and mental health service use. There is evidence that the use of participatory service practices are positively associated with mental health service use among caregivers and/or children compared to health service use by families not served through these participatory service practices (Glisson & Hemmelgarn, 1998; Weigensberg, et al., 2009). Yet we still lack insight on how these practices impact the use of health services within specific groups of families that have been considered in the literature as marginalized in the child welfare system.

In summary, we suggest that caregiver participation in decision-making through a PDM service practice will improve health service for caregiver and children.

Hypothesis 3.1: Compared to children and caregivers not served through a PDM service practice, children and caregivers served through PDM service practice will be more likely to use *physical* health services when needed.

Hypothesis 3.2: Compared to children and caregivers not served through a PDM service practice, children and caregivers served through PDM service practice will be more likely to use *mental* health services when needed.

This study adds to the literature by also including sub-group analyses on the impact of PDM service practices among racial and ethnic groups because current research has provided mixed results. Some studies have found no racial and ethnic differences (Crampton & Williams, 2000; Weigensberg, et al., 2009) while others have shown differences in the impact of PDM service practices among racial and ethnic groups (Nqui & Flores, 2006). In this study, we propose that Blacks and Hispanic families served through PDM service practices would have higher likelihood of health service use than their White counterparts. These participatory service practices provide opportunities for caregivers to share their cultural values and health service preferences with caseworkers and other professionals during service planning meetings. This, in turn, is likely to increase the cultural relevance of those services for families and increase the likelihood of service use.

We also examined the impact of PDM service practices among re-referred families. Repeated contact with a CPS agency may increase caregivers' motivation to participate in decision-making and use health services in an effort to avoid a subsequent CPS agency referral.

Hypothesis 3.3: Minority and re-referred caregivers and children served through a PDM service practice will be more likely to use physical health services when needed compared to White families.

Hypothesis 3.4: Minority and re-referred caregiver and children served through a PDM service practice will be more likely to use mental health services when needed compared to White families.

Decision-Making in the Child Welfare Context

The decision-making process at the CPS agency case level is based on county and/or state-level child welfare policies. The implementation of child welfare policies related to program planning, resource allocation, and case protocols are initially made at the state or county levels. CPS agencies nationwide differ widely on whether the state or the county lead that initial input into the decision making process (Marsh, D'Aunno, & Smith, 2000). Decisions on how to implement those policies are then handed down to managers and/or caseworker supervisors who work jointly with caseworkers on how to implement those decisions and on a case-by-case basis.

The benefits of community participation in the child welfare system have been analyzed in the literature mostly in terms of facilitating core values within the social work profession and as individual gain for family members who participate in service planning. Participatory efforts are deemed conducive to self-reliance among families involved with CPS agencies. Self-reliance is one of the core values in the social work profession (Banks, 2001; Matland, 1995). In addition, caregivers who are actively involved in decision-making during service planning are more likely to rely on their own knowledge and skills throughout the process than solely on the decisions made by the caseworker. This participatory approach is also considered a best practice among child welfare agencies (Smith & Donovan, 2003).

Consumer participation in public agencies in general has been shown to increase community members' understanding and appreciation of the challenges and trade-offs faced by the agencies (Ho & Coates, 2006). Yet despite shared agreement on the value of this participatory approach for the participating caregiver as previously described, public agency managers remain skeptical of the benefits of these practices for agency performance (Moynihan, 2003; Yang & Pandey, 2011). This study will contribute to the literature by examining factors associated with community participation in agency governance, the effect of this participation on agency service practices, and ultimately the impact of caregiver participation in service planning on the caregiver and child's use of health services.

Policy Significance of this Study

The prevailing view of the benefits of participation in child welfare is the promotion of individual core values within the social work profession: self-reliance, education, and engagement. Despite financial and human investment in these participatory practices and consensus on their value in child-serving agencies, there is skepticism among managers on the applied impact of these practices (Collins-Camargo, et al., 2009; Jones, Litzelfelner, & Ford, 2003). Most studies on community participation have focused on public forums (e.g., neighborhood councils) as the analytical context (Neshkova & Guo, 2012).

Evidence provided by this study could inform the efforts of health and human service agency managers, policy leaders, and funding agencies to identify interventions that foster service improvement for families, that are deemed best practices by child welfare scholars, and that are implemented in a child welfare setting. This setting has been considered a key point of entry to services for individuals with physical and mental health needs (Curtis, Dale, & Kendall, 1999). Empirical evidence that communities and family participation influence CPS agency service practices, and ultimately service use could potentially influence the advocacy clout that these groups could exert in how child welfare services are designed and delivered to the families served. In addition, given the current economic landscape, policy makers and serving agencies cannot afford to allocate limited resources to participatory practices without enough evidence that these practices are in fact allowing agencies to better meet the needs of families.

Organization of Chapters II–V

This dissertation research has been divided into three distinct manuscripts and each has been written in a format for publication in a peer-review journal. These three manuscripts are presented in Chapters II, III, and IV. An overarching conclusion is presented in Chapter V.

CHAPTER II: CHILD WELFARE AGENCY CHARACTERISTICS ASSOCIATED WITH AGENCY USE OF COMMUNITY REVIEW BOARDS AND CAREGIVER-BASED PLANNING/POLICY-MAKING GROUPS

1. Introduction

Child Protective Service (CPS) agencies have been described as inefficient and uninformed about local communities' needs and resources (Duncan, et al., 2008; Gambrill, 2008; Jones, et al., 2003; Tilbury, 2004). This likely limits CPS agencies' ability to assess children's safety risks and make appropriate "life-altering" decisions, such as removing a child from the home, during their involvement with the family (Duncan & Shlonsky, 2008, p. 173). Scholars consider a CPS agency's ability to make sound decisions at the policy and agency levels as the cornerstone of the child welfare system (Duncan, et al., 2008).

For over two decades, sponsors of child welfare legislation and scholars have called for increased community participation in agency decisions (Collins-Camargo, et al., 2009; Jones & Royse, 2008; Schorr, 2000; Waldfogel, 1998) as a way to improve services for families. In response, CPS agencies have established and worked with community review boards, in part to comply with federal mandates (Administration for Children and Families., 1998) as well as out of local initiative (Child Welfare Information Gateway., n.d.). These community review boards are comprised of volunteers who represent the agency's local community. Volunteers could include individuals with expertise in the child welfare system and/or caregivers who were previously served by a CPS agency (Jones & Royse, 2008).

Community boards are important to the general public, policy leaders, and managers because members of the community meet with CPS agency personnel to review child welfare policies, assess agency performance, and recommend changes to the agency's service practices. The ultimate goal of these boards is to improve CPS agency performance and services for families (U.S. Department of Health and Human Services, 1998; Ansell & Gash, 2007; Collins-Camargo et al.,

2009). One way for community members to improve agency policy is by sharing information about their communities' needs and priorities with CPS agency personnel.

Despite legislative and public support, as well as human resources allocated to these boards, not all CPS agencies across the United States have included community members in their boards (Collins-Camargo, et al., 2009). We know little about the sources of this variation and what specific agency characteristics make a CPS agency more likely to include community members in their boards.

A lack of understanding of what agency conditions foster their use of community boards may negatively impact the sustainability of community participation within CPS agencies. Also, an inconsistent use of community boards makes it difficult to assess their benefits and may indirectly lead to inconsistent services for families. Thus, the child welfare field could benefit from empirical evidence on the factors that facilitate public agencies' use of community boards.

This study seeks to contribute to the literature by examining the role of CPS agency characteristics in predicting variation in the use of community boards. We test our proposed associations using a national sample of public CPS agencies whose directors participated in the 2009 National Survey of Child and Adolescent Wellbeing (NSCAW). Through this approach, we seek to increase the external validity of our findings while appropriately accounting for agencies' differing contextual factors and resources.

This research focuses on three agency characteristics related to how caseworkers experience and perceive their work environment (i.e., agency's social environment). The next section provides an overview of the conceptual framework that supports the proposed associations.

Often, agencies are encouraged or mandated to use community boards without a clear understanding of the agency conditions that can best support those efforts. This study's findings could potentially inform policy leaders and agency managers on whether an agency's level of service culture, flexibility and caseworker strain play a role in the use of community boards. This information in turn could be used to increase the success of current efforts and to develop best practices to better prepare other CPS agencies seeking to use these boards for the first time.

2. Conceptual Framework

The selection of agency characteristics in this study was supported by a socio-technical systems framework. This framework originated in the early 1950s as an approach to the design of organizations where technology and individuals closely interface (Cummings, 1978). This close interface is particularly relevant in the child welfare system given the caregivers' perceived role as "active participants in the service experience and largely responsible for the changes sought by the agency" (Patti, 2000, p. 15).

The socio-technical framework posits that we can better understand how agencies optimize services and reach their goals by considering: a) the agency's core technology (i.e., types of policies and services) and b) how workers experience and perceive their work environment (i.e., agency's social environment) (Curtis, et al., 1999; Rousseau, 1977; Smith & Marsh, 2002). Policies are implemented by agencies with the expectation of improved performance (Schneider, 1996). Implementation efforts are more likely to be realized when they are accompanied by a work environment that "directs and motivates employees efforts" (Schneider, 1996).

In this study, three agency characteristics related to how workers experience and perceive their work environment (i.e., agency's social environment) are hypothesized to impact the likelihood of a CPS agency use of community boards: (a) Service-quality oriented culture, (b) flexibility in daily routines and practices, and (c) caseworker strain.

2.1. Service-Quality Oriented Culture

Child welfare scholars have argued that certain types of agency culture promote new approaches in the way the agency does business (Hurlburt, et al., 2004). A type of agency culture considered in this study is known in the literature as service-quality oriented culture which is characterized by norms and expectations that prioritize all managerial action to service quality improvement efforts within the agency. This type of agency culture is expected to increase an agency's use of strategies to "gather recommendations for improvements directly from teams of service providers and advisory groups of community opinion leaders" (Glisson, 2002, p. 248). I propose that an agency with a service-quality oriented type of culture is likely to impact an agency's inclusion of community members in decision-making for two reasons: a) Agencies with service

improvement norms and values are likely to attract a workforce (i.e., management and caseworkers) with similar individual values. These congruent values may make agencies more receptive to the implementation of service improvement policies, including the use of community boards, and b) an agency's common values are likely to guide the type of practices that are embraced for implementation. Thus, an agency with service improvement standards is likely to prioritize actions to set aside funding and personnel for the implementation of policies supportive of these standards. This service-quality agency culture has been empirically tested in child welfare and has been found to be significantly associated with higher quality services provided to families. Those services include CPS agency personnel being available to families and acting in the best interests of each child served (Glisson & James, 2002). No studies from the reviewed literature have tested the impact of service-quality culture on community review boards. However, these boards are considered by policy leaders and managers as service improvement practices within CPS agencies.

2.2. Agency Flexibility in Procedures and Rules

The second characteristic proposed in this study is the agency's level of flexibility in the daily procedures and rules. Community participation is likely to require CPS agencies to alter their communication practices to channel information to their community members and to adjust their procedures to better accommodate these members' needs. Thus, it is likely that agencies with a level of flexibility to accommodate those changes will be more likely to successfully incorporate and maintain community input. There is evidence that rigid and burdensome administrative rules and procedures within public administration agencies negatively impact community participation by hampering the flow of information from the agency to community members (Leslie et al., 2000; Yang & Pandey, 2011). In the child welfare system, rigidity could be reflected in agencies' inability to make the changes needed in the daily routine and procedures to accommodate community and caregiver participation.

However, formalization of rules and procedures "is necessary for the successful implementation and maintenance of collaborative activities" (Wandersman, Goodman, & Butterfoss, 2002, p. 267). Some studies have found a positive association between an agency's level of formalized procedures and rules and the sustainability of workers' efforts as well as workers'

commitment to the agency's goals (Jennings, et al., 1996; Patti, 2000). In the child welfare system, CPS agencies have been characterized as highly formal and structured agencies (Hasenfeld, 2010b). It is argued in this study that CPS agencies would need a level of flexibility to adjust their procedures to accommodate the needs and dynamics of community members. I hypothesize that the level of flexibility in procedures and rules is positively associated with higher community input within CPS agencies.

2.3. Caseworker Emotional Strain

Caseworker strain is defined as caseworkers' perception that their work environment is emotionally draining and detrimental to their well-being and success in their work (Glisson & Hemmelgarn, 1998). We propose that agencies with a lower level of caseworker strain will be more likely to engage community members in their governance. A less strained workforce is likely to be more energized and willing to add the necessary tasks, to their professional role, to make community participation in decision-making happen. Those tasks may include actively recruiting volunteer community members to be part of agency boards and supporting those members' participation in agency boards.

Hypothesis: A higher level of service-quality oriented culture, flexibility in CPS agency service procedures, and a lower level of caseworker strain within a CPS agency will increase the likelihood of a CPS agency use of community boards.

3. Methods

This study used secondary data to examine associations between CPS agency characteristics and community inclusion in governance.

3.1. Data Sources

All analyses in this study used data from the National Survey of Child Adolescent Well-being (NSCAW). NSCAW was the first national survey of children involved with child welfare agencies and sponsored by the Administration for Children and Families, which is part of the U.S. Department of Health and Human Services. The NSCAW survey includes information from cases where child

maltreatment was either confirmed (i.e., substantiated or indicated maltreatment) or not confirmed (i.e., unsubstantiated) by a CPS agency, based on the evidence threshold required by each state (Biemer, Dowd, & Webb, 2010). Thus, NSCAW included a vulnerable group of families in contact with CPS agencies; it was not designed to include all individuals receiving services from a Department of Social Services (e.g. Temporary Assistance for Needy Families or TANF).

NSCAW includes measures of CPS agency practices and characteristics, as well as child and caregivers' physical, social, and psychological health (Dowd, 2010). The NSCAW sampling frame reflected a two-stage stratified sample design. At the first stage, the United States was divided into sampling strata and primary sampling units (PSU). PSUs were defined as geographic areas that covered the population served by one CPS agency. Some CPS agencies serving a small number of children were combined to form PSUs. For the second stage, researchers used the PSUs as sampling frames for the selection of children into the NSCAW sample.

Given this study's interest in examining variation in CPS agency inclusion of community members in governance, we focused on NSCAW data collected from CPS agency directors interviewed at baseline. Directors provided information such as their agency's characteristics, policies guiding child welfare practice, and service availability and delivery to families (Casanuevas, Horn, Smith, Dolan, & Ringeisen, 2011). NSCAW included agency-related measures only at baseline, which was collected between March 2008 and September 2009. The response rate at baseline was 56%, and probability sample weights accounted for survey non-response.

RTI international, NSCAW's lead data collection agency, merged additional data from the 2009 Area Resource File into the NSCAW data file using county-level identifiers.

3.2. Sample

The unit of analysis in this study is the CPS agency. The NSCAW sample was comprised of a national sample of 86 public CPS agencies whose directors (county, local, or assigned) participated in the NSCAW II study. From those 86 agencies, five agencies were dropped from the sample because of missing information on agency characteristics (i.e., list-wise deletion). The final analytical sample was comprised of 81 CPS public agencies.

3.3. Measures

3.3.1. Agency use of community participatory practices

This construct was measured through three separate binary variables. Two variables indicated a CPS agency's use of a: 1) citizen review board to review agency practice, and 2) community board to provide input to the agency. The third variable measured caregiver participation in a planning/policy-making group, which also reflects community participation in an agency's review of policies and service practices. For this variable, the following explanation was provided to agency directors: "Some child welfare agencies involve families they have previously served as partners in agency management. Here are some ways that an agency might involve such 'alumni.' For each one, please indicate if your agency has involved previously served families in this way by saying yes or no."

3.3.2. Agency characteristics

For the three selected variables that measure agency characteristics, we conducted sensitivity analyses to understand the impact of missingness for each scale. We constructed four different scales on each variable: one scale using all available values, one dropping those with more than two items missing, one dropping those with more than three items missing, and finally one dropping those with more than four items missing. The four scales on each of the variables resulted in the same mean values for each scale, indicating that missingness would not be an issue for the scales.

Service-quality oriented culture. This scale was developed to determine the extent to which CPS agency caseworkers perceived that their agency had a service-quality oriented culture. Initially, the scale was constructed by calculating the mean of eight perceptual items as reported by caseworkers in the NSCAW survey. Some of the items included in the scale were: Unit members evaluate how much we benefit clients, Unit members find ways to effectively serve clients, and Unit members act in best interest of the client. The response scale ranged: 0=Not at all, 1=A slight extent, 2=A moderate extent, 3=A great extent, and 4=A very great extent. This agency-level scale has been validated in child-serving systems (Glisson, 2002). The Cronbach's alpha of the service-quality oriented scale demonstrated acceptable internal consistency of the survey items ($\alpha = 0.81$) (Cronbach, 1951).

Given that this measure is an agency-level variable, within-group consistency analysis among caseworkers from the same CPS agency in the sample was estimated using the within-agency interrater agreement index (r_{wg}) (James, Demaree, & Wolf, 1984). The average r_{wg} index for this sample was 0.978 (0.92–1.00 range). A consensus threshold of 0.70 or higher among caseworkers within an agency reflects a shared perception of experiences and it is a precondition for the construction of an agency-level measure (Cohen, Doveh, & Nahum-Shani, 2007). An estimated inter-agency reliability reflected minimum accepted variation (ICC2=0.70) between agencies in the scoring of this measure and based on a conventional threshold of ≥ 0.70 (LeBreton & Senter, 2008). For data analysis, caseworkers' responses were then aggregated to the agency level to obtain an agency's average service-quality oriented culture.

Agency flexibility in procedures and rules. This scale measured the extent to which caseworkers reported that their agency had flexible procedures. The scale was first constructed as a mean of seven perceptual items as reported by caseworkers. Some of the survey items included in the scale were: The same procedures followed in most situations, we usually work under the same circumstances day to day, there is only one way to do the job--the boss's way, and we are to follow strict operating procedures at all times. The response scale was: 0=Not at all, 1=A slight extent, 2=A moderate extent, 3=A great extent, and 4=A very great extent. This agency-level scale has been validated in the child welfare system (Glisson & James, 2002). The Cronbach's alpha of the scale reflected satisfactory internal consistency of the survey items ($\alpha = 0.70$). The average r_{wg} index for this measure was 0.958 with a 0.77 – 0.99 range. An estimated inter-agency reliability reflected lower than the conventional threshold (ICC2 = 0.66). For data analysis, the responses from caseworkers at each agency were aggregated to the agency level to obtain an agency's average flexibility in CPS service procedures (i.e., lower scores reflect higher level of flexibility).

Caseworker emotional strain. Caseworkers' view on the strain placed by their work environment is measured through a scale operationalized as the mean of six perceptual items as reported by the caseworkers. Some of the survey items included in the scale were: Co-workers show signs of stress, not given enough time to complete assignments, lack of time to finish the work, caseworkers are constantly under heavy pressure, and not enough people in the agency to do the

work. The response scale was: 0=Not at all, 1=A slight extent, 2=A moderate extent, 3=A great extent, and 4=A very great extent. This agency-level scale originally measured at the individual level and then aggregated has been validated in child welfare systems (Matland, 1995). The Cronbach's alpha reflected acceptable internal consistency of the survey items ($\alpha = 0.79$). The average r_{wg} index was 0.95 (0.78 – 0.99 range), which reflects high average agreement among caseworkers within a CPS agency. An estimated inter-agency reliability reflected acceptable between-agency variation (ICC2 = 0.76).

3.3.3. Contextual variables

Three variables captured agency differences that were potentially associated with CPS agency practices. The first variable indicated that a CPS agency was located in an urban geographical area. This variable accounts for differences in agency service practices between rural and urban settings (Landsman, 2002). A second binary variable captured whether an agency was under one or more consent decrees, defined as a class action lawsuit or court order related to child welfare practices (Smith & Donovan, 2003). Child advocates have used consent decrees as a legal strategy to improve services for families (Meltzer, Joseph, & Shookhoff, 2012). These lawsuits often lead to settlement agreements that become “consent decrees” upon approval by the court. Once approved by the court, the consent decree acts as a contract, binding the child welfare agency and the attorneys acting on behalf of the individuals represented by the lawsuit to its terms, and it is fully enforceable by the court. The consent decree describes specific actions CPS agencies must take to resolve the identified problems, and the plaintiffs' responsibilities to ensure the provisions in the decree are implemented (CWLA, 2005). Several individuals are involved in the litigation process as plaintiffs such as child welfare advocates and community members. These individuals are expected to provide an outside view of the child welfare system's strengths and weaknesses and recommendations for service improvement (Meltzer, et al., 2012). Thus, a CPS agency that is under consent decree is expected to be more likely to include community and family members in decision-making with the goal to improve agency policy and performance.

Finally, a continuous variable measured the amount of yearly Medicaid spending for children in thousands of dollars by state per enrollee. CPS agencies receive federal funding to support child

welfare serviced for Medicaid eligible children. These funds are known as Title IV-E and they are part of the Social Security Act. For example, Kinship Guardianship Assistance Payments provide subsidies on behalf of eligible children who enter into the legal guardianship with a relative (American Humane Association., n.d.). This variable captured differences in service practices based on variation in agency resources (LeRoux, 2009). This variable was drawn from the 2007-2009 Kaiser Family Foundation State Health Facts.

4. Analyses

Descriptive statistics were estimated to describe the study's overall sample. Pearson and tetrachoric correlations among predictors were $r=0.35$ or less and tolerance checks did not indicate multicollinearity concerns (Chen, Ender, Mitchell, & Wells, 2003). Multivariate logistic regression models were implemented given the binary nature of the outcome variable. To examine model fit, the Pregibon linktest, Hosmer and Lemeshow (GOF), and the Akaike Information Criterion (AIC) tests were employed in the analyses (Cameron & Trivedi, 2009). All data analyses were performed using STATA 12.0 statistical software (StataCorp, 2011).

This study's secondary data analysis was approved by the Institutional Review Board at the first author's academic institution. The NSCAW survey study was originally approved by the Institutional Review Board at RTI International.

5. Results

5.1. Sample Characteristics

Caseworkers' weighted descriptive statistics

A total sample of 2,363 caseworkers from 81 CPS agencies were included in this study, with an average of 33 caseworkers per agency (ranging from 1 to 163). From this group of caseworkers, 85% were female, 57% were White, 22% were African American, 19% were Hispanic and 2% represented other racial and ethnic groups. The average age was 37 years old (SD 0.81). Half of caseworkers had a non-social work bachelor's degree, followed by 23% with a bachelor's degree in social work, and 12% with a master's degree in social work. On average, caseworker annual income before taxes was \$43,044.13.

CPS agency characteristics

Table 2.1 provides descriptive statistics for the CPS agencies (n=81) used in analyses. Table 2.1 begins describing the frequency of agency use of community participatory practices. Most agencies used a community board (70%), and the same percentage of agencies (63%) had either a citizen review board or a caregiver-based planning/policy-making group at the time of the NSCAW survey. From all agencies, over one third (36%) had any one of those three types of community participatory practices. Concerning agency characteristics, the average number of agencies reported a level of service-quality orientation (mean=2.98, SD=0.23), corresponding with between “A moderated extent” and “A great extent.” Most agencies reported a level of flexibility in procedures (mean=1.71, SD=0.28) that correspond to “A slight extent” and “A moderate extent”. Finally, agencies reported a level of caseworker strain (mean=2.74, SD=0.34) that correspond to “A moderate extent” and “A great extent.”

Concerning contextual variables, the majority of agencies (80%) were located in an urban area, just over one third (35%) were operating under one or more consent decrees and had an average Medicaid funding per enrollee for children of \$ 2,187.65 (SD=510.48), ranging from \$1,300 to \$3,400.

Table 2.1.

Child Protective Service Agency Descriptive Statistics (n = 81)

	Mean %	S.D	Min	Max
Agency use of community participatory practices				
Agency has a community board	70		0	1
Agency has a citizen review board	63		0	1
Agency has a caregiver-based planning/policy-making group	63		0	1
Agency has a citizen review board, a community board and/or a caregiver-based planning/policy-making group	36		0	1
Agency characteristics				
Service-quality oriented culture	2.98	0.23	0	4
Low flexibility in agency procedures	1.71	0.28	0	4
Caseworker strain	2.74	0.34	0	4
Contextual variables				
Agency located in an urban area	80		0	1
Agency operating under one or more consent decrees	35		0	1
Medicaid spending by state per enrollee for children (In dollars)	2,187.65	510.48	1,300	3,400

Table 2.2 presents a correlation matrix for all variables in the analyses. The following correlations were higher than 30%. Two agency characteristics were positively correlated: service-quality related culture and agency flexibility in procedures ($r=0.35$, $p<0.05$), and two community participatory practices were also positively correlated: community review boards and caregiver-based planning/policy-making group ($r=0.34$, $p<0.05$).

Table 2.2.

Correlation Matrix

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
1.Community Board	1.00								
2.Citizen Board	0.23*	1.00							
3.Planning groups	0.34*	0.05	1.00						
4.Service-quality culture	0.14*	0.11	0.09	1.00					
5.Flexibility in procedure	0.02	0.05	-0.16	0.35*	1.00				
6.Caseworker strain	-0.10	0.12	-0.22*	-0.16	0.24*	1.00			
7. Agency funding	-0.04	0.28*	0.04	0.04	0.03	0.12	1.00		
8. Urban location	0.22*	0.00	0.26*	0.05	-0.24*	-0.19	-0.20	1.00	
9. Consent decree	0.07	-0.03	0.29*	0.22*	-0.17	-0.12	-0.15	0.17	1.00

* $p<0.05$

5.2. Multivariate Logistic Models

Table 2.3 presents the results of multivariate logistic models. Overall, the proposed agency characteristics of service-quality oriented culture, flexibility and caseworker strain were not significantly associated with a CPS agency's likelihood of including community members in decision-making ($p<0.10$). A higher threshold for the significance level was selected ($p<0.10$) given the small sample size in this study. I also implemented a model using a single outcome variable (i.e., an agency used any one of the participatory practices) and results did not differ.

Service-quality oriented culture

There was no evidence of a significant effect of an agency's service quality-oriented culture on the likelihood of having a citizen review board, community board or family participation in planning/policy-making groups.

Flexibility in CPS agency procedures

The model's results did not support the proposed hypothesis of the effect of flexibility in agency procedures on the likelihood of having a citizen review board, community board or family participation in planning/policy-making groups.

Caseworker strain

There was no evidence of a significant effect of caseworker strain on the likelihood of a CPS agency having a citizen review board, community board, or family participation in planning/policy-making groups.

Contextual factors

CPS agency funding was associated with higher odds (OR 1.13, SE 0.06) of agency use of a citizen review board while holding other factors constant in the model ($p < 0.05$). In addition, CPS agency consent decree status was associated with higher odds (OR 3.77, SE 2.31) of agency use of a caregiver-based planning/policy-making group ($p < 0.05$).

Table 2.3.

Agency Characteristics Associated with Use of Community Participatory Practices: Multivariate Logistic Regression Results

	Agency has a citizen review board (n=81)				Agency has a community board (n=81)				Agency has a caregiver-based planning/policy-making group (n=81)			
	OR	SE	P> t	95% CI	OR	SE	P> t	95% CI	OR	SE	P> t	95% CI
Agency Characteristics												
Service-quality oriented culture	3.76	4.81		0.30 46.27	2.99	3.86		0.24 37.42	1.15	1.37		0.11 11.72
Flexibility in agency procedures	0.86	0.84		0.13 5.79	1.20	1.23		0.16 8.94	0.66	0.64		0.10 4.45
Caseworker strain	2.24	1.67		0.52 9.62	0.77	0.76		0.11 5.32	0.31	0.24		0.07 1.42
Contextual Factors												
Medicaid spending by state per enrollee for children (In dollars)	1.13	0.06	*	1.02 1.25	1.00	0.06		0.90 1.12	1.07	0.06		0.97 1.18
Agency located in urban area	1.49	0.99		0.41 5.46	2.95	1.96		0.80 10.82	3.22	2.10		0.90 11.55
Agency operating under one or more consent decrees	0.87	0.46		0.30 2.47	1.05	0.59		0.35 3.18	3.77	2.31	*	1.13 12.55

+p<0.10 *p<0.05 **p<.01 ***p<.001

6. Discussion

This study examined whether specific CPS agency characteristics significantly predict the implementation of participatory practices at the governance level. It was expected that agencies with a service quality oriented culture, which values service improvement efforts, would be more likely to implement these practices. Other factors expected to have a significant impact on the use of community participatory practices were the level of flexibility in an agency's daily procedures and the level of strain among caseworkers carrying out community participatory practices.

The empirical models did not support the proposed hypothesis. None of the selected agency characteristics significantly predicted community participatory practices in the sample of CPS agencies. Yet some contextual factors included in the regression models as controls were significantly associated with community participatory practices. The level of state funding and an agency's consent decree status significantly predicted higher odds of a CPS agency having community participatory practices ($p < 0.10$). These findings could be interpreted as factors that are outside managerial control are better predictors of community participatory practices than within-agency cultural and structural factors. Demands for higher community input originated not from within agencies but in great part from external sources such as concerned citizens, advocacy groups, and elected/public officials. Results from this study suggest that contextual factors such as the level of state funding, which are beyond managerial action and control, better predict the use of community participatory practices. Contextual factors that are closer to institutional pressure from policy leaders, such as funding, and from public scrutiny, such as consent decrees significantly predicted participatory practices.

This study also provided evidence that these significant contextual factors had different impacts across participatory practices. That is, higher state funding predicted a higher likelihood of having citizen review boards while an agency's consent decree status significantly predicted family participation in planning/policy-making groups. We were not able to measure whether citizen review boards were mandatory vs. used out of local initiative by a county because that data was not available in the NSCAW survey. Regarding funding, an agency's use of additional funds seems to foster implementation of citizen review boards rather than other forms of participatory practices at the

governance level. It is possible that agencies seeking to incorporate community input in governance prioritize scarce funds to the implementation of citizen review boards. These boards are aimed at reviewing agency policies and practices and can be seen by agencies as a way to maximize the impact of community feedback.

It is also possible that other contextual factors related to state-level practices and community characteristics, which were not measured in this study, explain the observed variation in CPS agencies' participatory practices.

6.1. Limitations

This study's findings should be interpreted in light of three main limitations. First, this study did not measure changes in community participatory practices over time because data for this study were collected only at baseline in the NSCAW data file. Second, the external validity of the sample used in this study is limited to public child welfare agencies. Findings may not be generalizable to private profit or non-profit child welfare agencies in the country. Also, there is a possibility for potential residual confounding from unmeasured factors. This potential source of bias was reduced with the incorporation of control variables in the logistic regression models.

Third, variables used in this study were based on self-reports from agency directors and caseworkers. These measures are therefore subject to respondents' recollection of events and understanding of the items in the survey. Community participatory practice measures reflected whether local CPS agency directors reported that type of participation in their agency. Although agency directors are considered to be knowledgeable about their agency's participatory practices, the authors were not able to obtain more objective measures of these reported community participation practices (e.g., frequency of meetings and level of community members' participation in those meetings). The data available to researchers in the NSCAW file reflects a more general measure of local directors' interpretation of the survey questions.

Despite these limitations, this is the first study that empirically looks at the role of agency-level factors in the use of community participatory practices in the child welfare system. The need to address these research gaps has been voiced by some child welfare researchers who have called for

additional studies on the relationship among CPS agency practices, services and individual outcomes for families (NSCAW, 2010).

6.2. Conclusions

Pressure from policymakers and the general public to increase community participation in the child welfare system has paved the way for change. Many agencies have answered the call by incorporating feedback from community members into their policy review meetings. These efforts have been sparked by consensus among policy leaders, scholars and practitioners on the value of community input and by resources invested in the implementation of these participatory practices.

Past experience has shown that often the implementation of practices with intrinsic support from relevant stakeholders is often not sustained overtime. To ease and sustain the use of community participatory practices, efforts should be supported through the appropriate resources at the agency disposal (Matland, 1995). This study's findings suggest that sufficient resources should be provided to CPS agencies to implement participatory practices. Given the current economic landscape, public-serving agencies cannot afford to function under a trial-and-error approach when it comes to the use of community participatory practices. The contextual factors and resources that are likely to support these practices should be informed by research.

This study's findings could contribute to underscore the importance of funding. States interested in the implementation of participatory practices within the child welfare system should allocate funding to support their implementation. In addition, the association found between consent decree status and agency changes to their service practices could be interpreted as a last resource for communities to assure that CPS agencies are meeting families' needs.

CHAPTER III: COMMUNITY PARTICIPATION IN CHILD PROTECTIVE SERVICE AGENCIES: IMPACT ON FAMILY PARTICIPATION IN SERVICE PLANNING

1. Introduction

Child Protective Services (CPS) agencies make daily life-altering decisions, such as removing a child from their home and/or facilitating services for families, during their involvement with families (Duncan & Shlonsky, 2008). CPS agencies are part of state and local departments of social services responsible for receiving reports of suspected child maltreatment. The main goals of CPS agencies are to: (a) ensure the child's safety while keeping families together when possible, and (b) strengthen the ability of families to protect their children and ensure that the child's needs are met (Child Welfare Information Gateway., 2008).

Agencies' ability to reach those goals relies in part on caseworkers' ability to gather accurate information on families' needs and resources and facilitate child and caregiver engagement in services. CPS agencies have used participatory service practices as a way to better inform decision-making and ultimately improve services for families. Through these service practices, caregivers and family members are included in service planning meetings to work through their problems and devise solutions based on their own values and needs and to share their ideas with caseworkers and local service providers. Additional information on these practices is presented in the section below.

There is evidence of the benefits of these practices that include fewer child out-of-home placements, fewer family re-referrals to an agency, and higher use of health services (Gunderson, Cahn, & Wirth, 2003; Pennell & Burford, 2000; Weigensberg, et al., 2009). Yet only 10% of CPS agencies nationwide have reported using these practices at any given time (Weigensberg, et al., 2009). In addition, families have reported a lack of participation in the decisions made by caseworkers, and a lack of support throughout their engagement with the agency (Corby, Millar, & Young, 1996; Macaskill & Ashworth, 1995; Turnell, 1998).

Some scholars have argued that policy decisions that influence the type of services that families receive do not always meet their best interests and are often uninformed about local communities'

needs and resources (Duncan, et al., 2008; Gambrill, 2008; Tilbury, 2004). It is possible that agencies that incorporate community input in their policy decisions are committed to the inclusion of caregivers in decision-making during service planning as a way to align service practices with the values that drive agency policies.

Caregiver participation in service planning is important in the child welfare context because they are “active participants in the service experience and largely responsible for the changes sought by the agency” (Patti, 2000, p. 15). Caregiver participation is likely to increase caseworkers’ ability to gather relevant information about the type of services that could best meet a family’s needs. This in turn may increase the caregiver’s perceived relevance of the services offered or referred to by the agency because those decisions reflect a family’s values, preferences and needs (Goodman, 1989). Ultimately, these conditions are likely to improve decision-making and increase family engagement in services.

Sponsors of child welfare legislation have called for increase community participation in agency policy decisions as a way to improve services for families. Community participation has been incorporated by some CPS agencies through the use of community review boards (Jones & Royse, 2008). Legislators have drafted laws to support such efforts. For example, the Family Preservation and Support Services Program Act of 1993 encouraged states to use child welfare funds to voluntarily engage segments of the community in program planning at state and local levels (Child Welfare Information Gateway., n.d.). Further, the 1996 amendment to the federal Child Abuse and Treatment Act (CAPTA) mandated the creation of at least three community boards (i.e., citizen review panels) in each state as a way to guarantee the participation of community members in CPS agencies nationwide (Administration for Children and Families., 1998).

Agency community boards are not unique to the child welfare system. Health care and public administration agencies have also incorporated patients and community members, respectively, into their boards. Those health care and public service sectors have shown a higher delivery of comprehensive health services to families and higher information sharing between management and community board members compared to agencies with few or no patient/community members on their agency boards (Bradley Wright, 2012; Neshkova & Guo, 2012). Important differences in the

nature of these relationships must be kept in mind: Patients and community members likely seek out health care workers and government officials to solve their problems, and caregivers often experience the presence of CPS agencies in their lives as coercive and unwelcome (Chapman, Gibbons, Barth, & McCrae, 2003). Yet, findings from these service sectors could inform child welfare about the benefits of community boards because all agencies share the characteristics of being highly structured and procedural as well as relying on consumer engagement in services to reach their goals (Hasenfeld, 2010b).

For over two decades, CPS agencies have established and worked with community review boards, in part to comply with a federal mandate, as well as out of local initiative. These community review boards are comprised of volunteers who represent the agency's local community. Volunteer members may include individuals with expertise in the child welfare system and/or caregivers who were previously served by a CPS agency. Although it varies by state and county, in general, community members and CPS agency personnel attend several joint meetings throughout the year (Bryan, et al., 2007). Members of community review boards meet with CPS agency personnel to review child welfare policies, assess agency performance, and serve in an advisory role to recommend changes to the agency's service practices based on their community's needs and priorities. The goal of these groups is to improve CPS agency performance and services for families (Ansell & Gash, 2008; Collins-Camargo, et al., 2009).

Mere community participation in board meetings does not guarantee agency change. Thus, it is important to understand the mechanisms by which community members are engaged in policy review and their impact on service practices. Current research studies in the child welfare context are limited and they provide mixed results. The available research on community advisory boards has focused on qualitative studies identifying the group characteristics that are perceived by board members to facilitate the participation of community members in agency boards. Jones and colleagues (2004) found that mistrust, time constraints, unclear roles, and community members' lack of understanding of the child welfare system hindered the perceived ability of these members to influence CPS agency policy. Cahoon Byrnes (2002) found that 71% of individual child welfare case plans included at least one recommendation from a community-based review board (Cahoon Byrnes, 2002). However, 61%

of caseworkers surveyed in that study reported little use of the board's recommendations in their work. In addition, over half of caseworkers surveyed perceived those recommendations to be of little or no help for the case management process. Other research suggests that factors such as frequent communication between communities and CPS agencies through meetings, legitimate collaboration, and realistic group goals are associated with the ability of community review board members to influence policy (Jones, 2004; Jones, et al., 2003).

Despite strong support from the public and policymakers, we still lack evidence that community participation in advisory boards in fact influence CPS agency service practices (Collins-Camargo, et al., 2009). A lack of evidence of an association between community review boards and caregiver participatory service practices is problematic. If in fact, community members' participation in review boards influence CPS agency policy and ultimately improve services for families, agencies are missing valuable opportunities to empower communities, meet the needs of many families and successfully reach their goals.

This study adds to the child welfare literature on community and family-based agency practices by examining whether caregivers served by agencies using community boards are more likely to be served through participatory service practices. We addressed limitations from previous research by using a national sample of families served by CPS agencies to test the proposed association while accounting for individual, case and agency characteristics.

Findings from this research could increase our understanding of the impact of community members' advisory role in shaping CPS agency policies and service practices. A specific theory or conceptual framework explaining how this linkage works was not available in the reviewed literature. I suggest that a collaborative governance framework from the public administration literature could be applied to the child welfare context (Sirianni, 2009). This framework provides support for the assumption made in this study that an agency's use of community review boards reflects a level of commitment to a participatory and democratic approach to service practice (Farmer, et al., 2010). Collaborative governance is defined in this study as the activities through which communities play an advisory role that is expected to influence CPS agency policy.

Participatory Decision-Making Service Practices

Since the mid-1990s, some CPS agencies have taken action to increase family involvement through a family-centered approach to service practices. Some of these practices are called Family Group Decision-Making, Family Team Conferencing, and the Unity Model. They differ mainly in how they structure the service process with families. In the Family Group Decision-Making service model the family and the caseworker make collaborative decisions and the service planning process is led by a trained coordinator, who is independent of the CPS case (King, et al., 1998). In the Family Team Conferencing model the family and the child's service team make joint decisions, and often the CPS caseworker serves as the team coordinator. Last, within a Unity Model families have a private meeting that does not include service providers to develop a service plan for their child prior to sharing with the service team (Halvorsen, 2003).

All three service practices share the fact that caregivers, family members, community members and others involved in the CPS case (i.e., the child's service team) are given the opportunity to work through their problems and devise solutions based on their own values, cultures, and needs, and to share their ideas with caseworkers and local service providers during service planning meetings (Merkel-Holguin, 2004). A family-centered approach to services is considered a good practice for improving families' experiences and services during their involvement with the child welfare system (Merkel-Holguin, et al., 2003). These practices are in contrast to standard CPS procedures to serve families that include background checks of the adults living with the child to ensure the child's safety, periodic visits by a case worker to ensure that the child remains in a safe environment at home, and facilitation of voluntary services for the caregiver and/or the child if deemed necessary (Child Welfare Information Gateway., 2008). Through the standard practice, a caregiver invited to service planning meetings is often out-numbered by caseworkers and other professionals in the meetings, and/or decisions are made in the family's absence altogether (Sheets et al., 2009).

2. Conceptual Framework

An agency is governed collaboratively when community members (i.e., citizens) meet with agency personnel in collective forums to engage in consensus-oriented activities such as information exchange and decision-making (Ansell & Gash, 2008). The term “community” in this study refers to individuals who share a common purpose or interest, mutual commitment to each other’s wellbeing, and a sense of belonging to a collective entity (Wandersman, et al., 2002). For over two decades, public service agencies have redefined their governance to become more collaborative as the complexity of social problems and diversity of its consumers increase (Sirianni, 2009). Scholars have analyzed this shift to higher community participation among public agencies from a collaborative governance framework. Within this framework, public policy seeks to “empower, enlighten, and engage citizens in the process of self-government” (Sue & Sue, 2012, p. 1). Scholars have proposed this framework as an alternative to the top-down, adversarial approach to public governance (Fung & Wright, 2003).

Compared to hierarchically governed agencies, agencies with collaborative governance may have policies that are informed by communities’ local knowledge, which would likely increase community investment in the agency’s goals and strengthen the perceived legitimacy of the agency’s decisions (Daudelin, Lehoux, Abelson, & Denis, 2011; Sirianni, 2009). Thus, collaborative policy-making may allow managers to reach operational decisions with less community and family resistance and, as a result, change the way agencies serve families (Thurston et al., 2005).

2.1. Collaborative Governance in the Child Protective Service Agency Context

One of the core principles of collaborative governance is the mobilization of community assets for problem solving and development (Sirianni, 2009). Community participation is likely to foster a flow of local information, which could be considered an asset to a CPS agency. For example, previously served caregivers participating in agency forums or planning/policy-making groups are likely to share their own experiences with the child welfare system. The literature suggests that these experiences may include frustration with caregivers’ level of participation in decisions made at the service level and a lack of support throughout the service delivery process (Corby, et al., 1996; Macaskill & Ashworth, 1995; Turnell, 1998). These first-hand accounts from community members are

likely to influence managers' efforts to include caregiver and family input in decisions made at the service level.

In the reviewed literature, the collaborative governance framework did not provide a description of how collaborative governance is thought to be associated with changes in service practices. I propose that agency policies that are informed by community members are likely to affect service practices in two ways. First, CPS agencies gain valuable information from community members on the appropriateness of their policies for families served by the agency. Community members may include local community leaders, child advocacy groups, and/or former caregivers served by a CPS agency. This exchange of information may be critical in maintaining the relevance of agency policies due to the nature of child welfare work and the fact that many families involved have multiple and fluctuating social and health needs (Burns, Phillips, Wagner, & Barth, 2004; Landsverk, et al., 2002). Second, agency policies that are informed by their communities are more likely to reflect families' priorities, needs, and values. This family-focused input may influence managers' decisions to include caregivers in decision-making during service planning as a way for agencies to align service practices with the values that drive agency policies.

One family-oriented service practice in the child welfare context seeks to increase participation by caregivers, relatives and other family supports in the decision-making process during service plan development meetings (Connolly & McKenzie, 1999; Weigensberg, et al., 2009). This group approach to decision-making originated in the late 1980s from the indigenous Maori group in New Zealand. It was introduced in the national child welfare system in the mid-1990s as a way for public agencies to use a model seen as empowering historically marginalized groups (Damashek, Bard, & Hecht, 2012; Montori & Guyatt, 2008). These and other collaborative decision-making approaches are likely to increase the caregivers' sense of empowerment and investment in those joint decisions (Patti, 2000).

In summary, we suggest that community inclusion in CPS governance will yield tangible improvements in the quality of decisions and ultimately benefit children and families.

Hypothesis 2.1: Compared to children and caregivers from CPS agencies without community inclusion in review boards, children and caregivers from agencies with community inclusion in

CPS agency governance will be more likely to be included in decision-making during service planning meetings.

Manager efforts to increase families' participation may also reflect practices where previously served caregivers are included in the service planning meetings of currently served families. Previously served caregivers are expected to use their own experiences with the CPS system to guide and support currently served families (Dolan, et al., 2012).

Hypothesis 2.2: Children and caregivers from agencies with community inclusion in CPS agency governance will be more likely to have previously served caregivers in their service planning meetings than children and caregivers from agencies without community inclusion.

The following section describes the measures used in this dissertation study to test the proposed hypotheses.

3. Methods

3.1 Data Sources

All analyses in this study used data from the second cohort of the National Survey of Child Adolescent Well-being (NSCAW). NSCAW was the first national survey of children involved with child welfare agencies that included measures of CPS agency practices and characteristics as well as child and caregivers' physical, social, and psychological health (Dowd, 2010; Waldfogel, 2000). This survey was sponsored by the Administration for Children and Families, which is part of the U.S. Department of Health and Human Services. The NSCAW sampling frame reflected a two-stage stratified sample design. At the first stage, the United States was divided into sampling strata and primary sampling units (PSU). PSUs were defined as geographic areas that covered the population served by one CPS agency. For the second stage, researchers used the PSUs as sampling frames for the selection of children into the NSCAW sample. Some agencies serving a small number of children were combined to form PSUs. However, in larger metropolitan areas, smaller geographic areas were defined so that sampling of the areas could be accomplished within a small number of CPS agencies/offices within the metropolitan area.

The NSCAW data file includes information from cases where child maltreatment was either confirmed (e.g., substantiated or indicated maltreatment) or not confirmed (i.e., unsubstantiated) by a

CPS agency (Biemer, et al., 2010). NSCAW followed a vulnerable group of families in contact with CPS agencies and it did not include all individuals receiving services from a department of social services (e.g., Temporary Assistance for Needy Families or TANF). The NSCAW study included one child per household, regardless of any siblings who were also included in a CPS service plan. In addition to the focal child, sources of information in NSCAW included permanent caregiver(s), the family's caseworker, and the local CPS agency director (NDACAN, 2010; Pennell & Burford, 2000). The caregiver was the unit of analysis, given this study's interest in examining whether CPS inclusion of community members in agency boards increases the likelihood of caregiver inclusion in decision-making during service planning. In addition, models at the individual level are more precise than at the CPS agency level given the increased sample size. There is an average of 68 caregivers per agency who were interviewed at baseline and who had custody of the child at the time of the survey (range of interviewed custodial caregivers per agency: 3 to 417).

NSCAW included measures of agency community boards and caregiver-based policy groups only at baseline, which was collected between March 2008 and September 2009. RTI international, NSCAW's lead data collection agency, merged additional contextual data from the 2000–2009 Kaiser Family Foundation State Health Facts into the NSCAW data file using county-level identifiers.

3.2. Sample

The full NSCAW sample was comprised of 5,872 children, their caregivers, and the family's caseworker that participated in the survey study. Of those caregivers, 4,112 received services by a CPS agency. Given the scope of this study, the analytical sample was further restricted to caregivers of children who remained in the home ($n=2,207$), who had custody of the child ($n=2,169$), and whose caseworker was also interviewed ($n=1,884$).

Item non-response was present in five variables included in the models and accounted for missing items that further reduced the analytical sample to 1,735 caregivers. The number of missing observations on each of these variables comprised 3% of the total sample or less. Bivariate analyses were employed to compare differences in the group observations observed in the sample and those missing. As shown in Table 3.1, compared to caregivers in the study sample, omitted caregivers due to missing data were slightly younger in age and with fewer cases where physical abuse was the

most serious type of maltreatment. Also, these omitted caregivers were served by fewer agencies where caregivers were part of planning/policy-making groups, and with fewer active consent decrees.

Table 3.1.

Bivariate Analyses of Item Respondents vs. Non-Respondents

	Study Sample	Missing Observations Sample	P value
Caregiver/ Case Variable			
Physical abuse is the most serious type of maltreatment	17%	10%	0.001**
Caregiver age in years	29.59	27.87	0.000**
Agency Variable			
Agency has a community review board	74%	72%	0.938
Agency has caregivers being part of planning /policy-making group	69%	27%	0.001**
Agency has a consent decree	36%	8%	0.000**

*p<0.05; **p<0.01

Multiple imputations of agency-level variables may not provide accurate data due to the lack of covariates at this level that could be included in the imputation procedure at this level and the individual-level focus of this paper. Due to the low number of observations missing and the fact that half were agency-level variables, non-imputed data were used in the analytical regression models. We still expect the exclusion of these data to be of negligible importance because the percentage of missing observations is low (i.e., 3%), and omitted observations are expected to be unrelated to the outcome variables. We still would expect unbiased estimates in the regression models using complete case analysis where the missing observations are dropped. The standard errors may be higher because the models have less information to estimate the parameters due to missingness.

3.3. Measures

3.3.1. Inclusion of Caregiver/family member in decision-making during service-planning meetings

Two outcome variables measured caregiver inclusion in service-planning meetings. The first variable measured whether a caregiver/family member was included in decision-making during service planning meetings based on the caseworker's report of whether he/she used of any one of the following service practices to serve the family: a) Family Group Decision-Making (FGDM), b) Conferencing, or c) Unity Model. The original categorical survey question was phrased as, "Please tell me how the placement decision or plan to ensure the safety of the child was made." Response options for that item were: 1) Agency Team Staffing, 2) Family Group Decision-Making, Conferencing or Unity Model, 3) Caseworker Decision, 4) Police, 5) Cross-Agency Taskforce, or 6) Other. Response option # 2—Family Group Decision-Making, Conferencing or Unity Model—was used as a measure of caregiver/family member inclusion in decision-making during service planning because those three models share the fact that caregivers, family members and community members are involved in the service planning process. In principle, when a caseworker reports using any of these three models, it is assumed that caregiver and family support, as well as support from other agencies involved in the case, was present during service planning meetings and that there was an active inclusion of those individuals in decision-making during the meetings (King, Feltey & O'Neil, 1998; Halvorsen, 2003).

The accuracy of this measure was increased by conditioning the variable on cases where the caregiver (i.e., mother, father, stepparent) or family member (i.e., grandparent, other family relative) attended the service planning meeting as reported by the caseworker in another survey question (Weigensberg, et al., 2009). Cases in which a caseworker reported using one of the three service models, but not the presence of a caregiver/family member in the service planning meetings, were dropped from the analytic sample because they were not consistent with the expected service model approach.

The second outcome variable in this study reflected a caregiver/child from a CPS agency with previously served caregivers participating in current families' service planning meetings.

3.3.2. Community Participatory Practices

Inclusion of community members in agency was measured by three separate binary variables reflecting a CPS agency's use of a: 1) citizen review board, 2) community board, or 3) caregiver-based planning/policy-making group at the time of the NSCAW survey as reported by the CPS agency director.

3.3.3. Covariates

Several variables were included to account for potential confounders of the association between the main predictors and type of services provided to families:

CPS agency characteristics. Three variables captured agency differences that were potentially associated with the main predictors and the type of services provided to caregivers. The first variable indicated that a CPS agency was located in an urban geographical area. This variable accounts for differences in agency practices that may be explained by its location in a rural or urban settings (Landsman, 2002). A second binary variable captured whether an agency was under one or more consent decrees, defined as a class action suit or court order related to child welfare practices. Agencies under consent decrees may be more likely to implement policy and service practice changes, such as community and family inclusion in decision-making, in response to that legal action (Smith & Donovan, 2003). Finally, a continuous variable drawn from the 2007--2009 Kaiser Family Foundation State Health Facts measured the amount of Medicaid spending per year for children by state per enrollee. This variable captured variation in agency resources, such as an agency having a higher number of caseworkers available to reach out to community and family members to include them in participatory agency practices.

CPS case and caregiver characteristics. Several factors with potential influence over the type of services that caregivers received were included as control variables in this study. The type of child maltreatment was operationalized as a series of binary variables measuring the most serious type of maltreatment identified in the case. Types of maltreatment included physical abuse, sexual abuse, neglect, and other type of maltreatment (e.g., emotional, health). A categorical variable was used to reflect family risk and account for case characteristics. Family risk factors used to derive this variable included the presence of domestic violence, caregiver substance abuse, and family

difficulties in meeting basic needs (Farmer, Southerland, & Mustillo, 2009). This risk variable was initially constructed as an average on the number of risk factors that a caregiver reported (e.g., domestic violence, low cooperation during investigation). Each caregiver's average was then divided into tertiles to derive a three-level categorical variable reflecting a low, medium, or high level of family risk at the time of the NSCAW survey. Caregiver age in years and binary (1/0) variables measuring caregiver gender and race/ethnicity accounted for caregiver characteristics.

3.4. Data Analysis

NSCAW has a hierarchical survey structure where families and caseworkers are nested within CPS agencies, which may appear to indicate a multi-level analytical approach (Rabe-Hesketh & Skrondal, 2005). However, this multi-level approach, which is based on asymptotic theory, may not be the best fit for NSCAW survey data with unbalanced and small agency sample size of fewer than 100 observations. Violation of the multi-level assumptions creates a source of bias for the estimates. Preliminary one-way analysis of variance indicated relatively low variation (5%) in a dependent variable across agencies (Paul, 1990). In addition, the role of upstream agency-level factors, such as agency culture, is beyond the scope of this study. Thus, all regression models were analyzed as single-level, cross-sectional models, while accounting for NSCAW's complex survey design using STATA's SVY module (Biemer, Christ, Wheelless, & Wiesen, 2008; NDACAN, 2010). The Stata SVY module accounts for individual probability weights, stratification, and clustering of caregivers and caseworkers within CPS agencies (Simms, et al., 2000).

Descriptive characteristics were estimated using Stata 12's SVY command to reflect statistics representative of caregivers involved with CPS agencies in the United States (Biemer et al., 2008; StataCorp, 2007). Pearson and tetrachoric correlations between predictors were $r=0.45$ or less and tolerance checks did not indicate multicollinearity concerns (Allison, 1999). Multivariate regression analyses were implemented using Stata 12's SVY command to account for NSCAW's complex survey design. Logistic models were used, given the binary nature of the dependent variables. To examine model fit, the linktest, Hosmer and Lemeshow (GOF), and the Akaike Information Criterion (AIC) tests were employed in the analyses (Cameron & Trivedi, 2009).

Secondary data analysis was approved by the Institutional Review Board at the first author's academic institution. The NSCAW survey study was originally approved by the Institutional Review Board at RTI International.

Table 3.2.

Weighted Descriptive Statistics for Custodial Caregivers Served by a CPS Agency and Whose Child Remained at Home (n = 1,735)

	Mean / %	S.D	Range
Dependent Variables			
Inclusion of caregiver/family member in decision-making during service planning meetings	10		0 - 1
Inclusion of previously served caregivers in current family service planning meetings	44		0 - 1
Community participatory practices			
Agency has a citizen review board	60		0 - 1
Agency has a community board	66		0 - 1
Agency has a caregiver based planning/policy-making group	63		0 - 1
Agency has a citizen review board, a community board and/or caregiver based planning/policy-making group	26		0 - 1
Other covariates			
<i>Agency characteristics</i>			
Agency located in an urban area	78		0 - 1
Agency operating under one or more consent decrees	36		0 - 1
Medicaid yearly spending by state per enrollee (In dollars)	2,000	0.99	1,300 – 3,400
<i>Case characteristics</i>			
Physical abuse as the most serious type of child maltreatment	21		0 - 1
Sexual abuse as the most serious type of child maltreatment	6		0 - 1
Neglect as the most serious type of child maltreatment	32		0 - 1
Other type of abuse as the most serious type of child maltreatment [Referent]	41		0 - 1
Family risk level	2.39	0.05	1 - 3
Caregiver age in years	33	0.46	18 - 69
Caregiver gender			
Female	92		0 - 1
Male	8		0 - 1
Caregiver race/ethnicity			
White [Referent]	42		0 - 1
Black	17		0 - 1
Hispanic	35		0 - 1
American Indian, Pacific Islander	8		0 - 1

4. Results

4.1. Sample Characteristics

Table 3.2 provides descriptive information for all study measures. Ten percent of caregivers were served through the FGDM, Conferencing or Unity Model and the attendance of a caregiver or a family member to the service meeting was confirmed by the caseworker. This percentage is consistent with the literature on the prevalence of caregivers served by those models in the child welfare system (McCrae & Fusco, 2010). Fewer than half of caregivers (44%) were served by agencies where a previously served caregiver was included in current family service planning meetings. Most caregivers were served in a CPS agency with a citizen review board (60%), community board (66%) or a caregiver-based planning/policy-making group (63%). Just over 20% of caregivers (23%) were served by an agency with all three.

Most caregivers were served by an agency located in an urban area (78%) and about one-third by an agency with one or more active consent decrees at the time of the NSCAW survey. The average yearly Medicaid spending per child by state was \$2,000 and ranged from \$1,300 to \$3,400. The most prevalent serious type of child maltreatment was other (41%), followed by neglect (32%) and physical abuse (21%), and the least prevalent was sexual assault (6%). Regarding the family risk level measure, most families were at a high risk level (42%), followed by a medium risk level (36%), and then by a low risk level (22%). The average caregiver interviewed was 33 years old, female (92%), and White (42%).

4.2. Multivariate Logistic Models

Table 3.3 shows the results of the multivariate logistic models. Findings did not support the proposed hypotheses. Contrary to expectations, agency use of a caregiver-based planning/policy-making group was associated with a *lower* probability that a caregiver/family member would be included in decision-making during service planning meetings (OR= 0.52, $p<0.05$) and holding other factors constant. Agency use of a citizen review board or a community board was not significantly associated with any one of the dependent variables.

Table 3.3.

Community Inclusion in CPS Agency Governance and Caregiver Inclusion in Decision-Making: Multivariate Logistic Regression Results

	Inclusion of caregiver in decision-making during service planning meetings				Inclusion of previously served caregivers in current family service planning meetings			
	OR	SE	P> t	95% CI	OR	SE	P> t	95% CI
Community inclusion in CPS agency governance								
Agency has a citizen review board	1.13	0.39		0.57 2.24	1.99	1.66		0.38 10.49
Agency has a community board	1.36	0.42		0.74 2.51	1.35	1.27		0.21 8.78
Agency has a caregiver based planning/policy-making group	0.52	0.16	*	0.28 0.96	4.63	4.24		0.75 28.70
Other covariates								
<i>Agency characteristics</i>								
Agency located in an urban area	1.15	0.63		0.39 3.40	0.45	0.54		0.04 4.87
Agency operating under one or more consent decrees	1.27	0.42		0.66 2.45	2.80	2.26		0.56 14.00
Medicaid yearly dollar spending by state per enrollee	1.03	0.03		0.97 1.10	0.96	0.07		0.83 1.12
<i>Case characteristics</i>								
Physical abuse as the most serious type of child maltreatment	0.28	0.08	**	0.16 0.49	0.89	0.18		0.59 1.35
Sexual abuse as the most serious type of child maltreatment	0.59	0.28		0.23 1.52	1.62	0.86		0.56 4.67
Neglect as the most serious type of child maltreatment	0.63	0.19		0.34 1.16	0.85	0.19		0.55 1.33
Family risk level	1.63	0.35	*	1.06 2.51	0.96	0.16		0.69 1.34
Caregiver age in years	0.95	0.01	**	0.92 0.98	0.98	0.01		0.97 1.00
Caregiver gender: female	0.40	0.27		0.11 1.53	0.61	0.19		0.33 1.12
Caregiver race: Black	0.69	0.30		0.29 1.64	1.03	0.47		0.41 2.57
Caregiver race: Hispanic	0.70	0.25		0.34 1.43	1.32	0.59		0.54 3.19
Caregiver race: American Indian, Pacific Islander	0.61	0.23		0.29 1.29	0.75	0.24		0.39 1.43

N=1,735; +=p<0.10, *=p<0.05, **=p<0.01, ***=p<0.001

There were several significant associations between covariates and dependent variables. A case with physical abuse as the most serious type of child maltreatment, and caregiver age were each significantly associated with fewer odds of a caregiver being served by a service model in which a caregiver/family member was involved in decision-making (OR=0.28, $p<0.05$ and OR=0.95, $p<0.05$ respectively). Family risk was also associated with higher odds that a caregiver/family member would be included in decision-making during service planning (OR=1.63, $p<0.01$).

In addition, sensitivity analyses examined whether the main predictors had a combined impact by constructing a single binary (1/0) variable, denoting an agency use of a citizen review board, community board, or a caregiver-based planning/policy-making group and conducting f-tests. Those tests' results did not differ from the main models' findings.

5. Discussion

The goal of child welfare policies that include community members through community boards or planning/policy-making groups is to better inform service practices and ultimately to improve services for families. We proposed that caregivers served by these agencies are expected to be more likely to inform the agency's service decisions that affect them. However, this relationship was not supported by the findings in the present study. In fact, an agency use of planning/policy-making groups was negatively associated with caregiver/family member inclusion in decision-making during service planning meetings. In the NSCAW data file, from the group of caregivers who were served by an agency that included community members in governance just 12% of caregivers were also served through a participatory service practice during service planning meetings. This percentage was similar for caregivers served by agencies using citizen review or community boards. It is possible that agencies that are having difficulty including caregivers at any level (i.e., governance and service practices) prioritize the involvement of the few available caregivers to volunteer in CPS agency governance. Once these few caregivers are invited to participate at the governance level in planning/policy-making groups they may be less willing to also participate in service planning meetings due to time constraints. These caregivers may be selective with their time and perceive that their contributions to service improvement are more effective when they participate in agency governance than when they participate in service planning meetings. Thus, within some CPS

agencies community involvement in governance might substitute potential caregiver involvement in service planning meetings. These findings are in line with some of the existing literature showing a lack of agency action as a result of community participation in governance (Cahoon Byrnes, 2002; Jones, 2004). Another interpretation of these results is that community involvement at the policy level is not perceived by managers as relevant for caregiver inclusion in service planning activities.

In this study, emergent findings were related to the characteristics of the case. The family's risk level was a significant predictor of caregiver/family member inclusion in decision-making during service planning meetings. It is plausible that cases considered by a caseworker as higher risk are also considered more appropriate for caregiver and family member inclusion in decision-making as a way to get everyone on board with child safety-related decisions. In addition, cases with a more mature caregiver and lower risk based on type of maltreatment were negatively associated with participatory decision-making. This makes sense from the caseworker perspective in that these conditions are less likely to lead to future safety concerns for the child and therefore less need to include family members in decision-making.

These findings suggest that decisions made by caseworkers on whether to include caregivers and family supports in service planning meetings rely on their assessment of family risk and not necessarily to better inform decision-making in general. Caregiver inclusion in decision-making may be more related to the agency's ability to gain buy-in from caregivers and accurately appraise a child's safety risk, and less related to whether community members are informing decision-making at the governance level.

5.1. Limitations

Given the observational nature of this study, there are several limitations that likely impacted the interpretation of the findings. First, the external validity of this NSCAW sample is limited to public CPS agencies, and therefore may not be generalizable to private child welfare providers. Also, the cross-sectional nature of the study does not provide an understanding of patterns of family inclusion in decision-making over time.

Second, there are potential limitations related to the validity of the measures included in the present study. Most of the measures are based on self-reports from agency directors, caregivers and

caseworkers. The accuracy of these measures can vary due to reliance on the respondents' ability to accurately recollect events and fully understand the items asked in the survey. For the outcome variable where the caseworker reported using any one of the service models (i.e., FGDM, Conferencing, or Unity model), a description of each model was not included in the NSCAW survey question. Thus, the present study measured each caseworker interpretation of participatory service practices and whether he/she felt that a particular service practice was used with a family. Additional measures, such as observation of meetings to ensure that these activities were being implemented, are not available in the NSCAW data file. In addition, the NSCAW survey did not include information on whether an agency's community boards or caregiver based policy/planning groups were mandated or created as a result of local initiative. There may be differences on how community review boards are structured and on the human resources such as managerial and caseworker time allocated to such meetings. Another limitation is the lack of a theoretical framework providing a description of the mechanism(s) responsible for supporting the proposed association between community inclusion in agency governance and changes in agency service practices.

Third, despite the inclusion of covariates in the regression models, there may be potential residual confounding from unmeasured factors. Those factors could include a racial discrepancy between the composition of community board members and the families served by the agency (LeRoux, 2009) and county-level policies that may impact CPS practices. It is possible that these factors not included in the NSCAW survey could have an impact on family inclusion in decision-making during service planning. There is also potential for response bias influencing the study findings as a result of significant differences between the observed and the missing information for some of the agency variables.

Although these limitations preclude an assumption of causality, the present study used information from the best available source -- NSCAW is a national survey on public CPS agencies with information from agency directors, caseworkers and families. Also, the examination of the proposed relationships may be valuable in increasing our understanding of the impact of community and family participation in CPS agencies' policies and service practices.

5.2. Conclusions and Future Research

One of the goals of the inclusion of community members in agency boards and the use of caregiver-based planning/policy-making groups is to better inform policies and ultimately impact agency performance. Given the legislative support/mandate for community and family inclusion in decision-making, policy leaders and scholars should prioritize a research agenda that examines how agencies translate community input at the governance level into concrete actions aimed at including and maintaining family voices in the service planning process. There are several agency actions that could be associated with the inclusion of community members in agency governance. Such actions may include the development or improvement of comprehensive monitoring systems to evaluate agency performance and family outcomes. Future studies could measure additional actions taken by CPS agencies through archival review of agency documentation and observation of community boards and planning groups.

This study measured only one action at the service level and although findings did not support the proposed associations, other studies should continue to examine the impact of community-based practices in the human and health service system. Future research could focus on identifying the means by which community participation in agency review boards may drive family-oriented service practices, what type of community participation is more likely to improve services for families, whether there is a differential effect between mandated versus voluntary efforts within the child welfare system, and outcomes for families. This information may better inform managers' efforts to maximize community and family involvement in decision-making to maintain children's safety and maximize well-being.

CHAPTER IV: CAREGIVER PARTICIPATION IN DECISION-MAKING WITHIN CHILD WELFARE AGENCIES AND IMPACT ON INDIVIDUAL HEALTH SERVICE USE: A PROPENSITY SCORE ANALYSIS

In the United States, Child Protective Service (CPS) agencies provide or facilitate health services for a growing number of families as a way to ensure children's safety and family wellbeing (Child Welfare Information Gateway., 2008). Despite CPS agency efforts, many individuals do not receive services or end services prematurely (Bai, et al., 2009; Burns, et al., 2010; Hurlburt, et al., 2004; Leslie, et al., 2005; Simms, et al., 2000). Research on families involved with CPS agencies indicates that about half of the children (54%) and caregivers (56%) identified with a mental health need receive some type of service (Dolan, et al., 2012; Mennen & Trickett, 2007). Other studies have reported that between 16% and 55% of children in contact with a CPS agency have received physical health services such as required immunizations or periodic visits to the dentist (Blatt et al., 1997; Kortenkamp, 2002).

Significant inequities in racial and ethnic minorities' use of child mental health services have also been documented (Garland, Landsverk, & Lau, 2003; Leslie, et al., 2000), even after accounting for age and severity of behavior problems (Garland, et al., 2000). Burns and colleagues (2004) found a lower likelihood of mental health service use among Black youth remaining at home after a CPS investigation compared to their White counterparts (Burns, et al., 2004). A national child welfare survey found that, according to their caregivers, 13.4% of Black children and 14.1% of Hispanic children did not receive timely health care services due to prohibitive costs (Ringeisen, Casanueva, Smith, & Dolan, 2011). In addition, among caregivers with mental health needs, Black caregivers were less likely to have used outpatient mental health services, and Hispanic caregivers were less likely to have used prescription medications compared to Whites (Dolan, et al., 2012).

Low health service use among families served by a CPS agency, including racial and ethnic minorities, is particularly troublesome for two reasons. First, child maltreatment has been linked with caregivers' untreated mental health needs, such as stress and trauma, and the presence of physical

health conditions among children, including developmental delays and diabetes (Casanueva, et al., 2008; Svensson, et al., 2013). Unmet mental health needs among caregivers have also been associated with repeated referrals (“re-referred”) to a CPS agency for potential child maltreatment (English, et al., 1999). Second, health services may not be readily available otherwise because many of the families coming from areas characterized by unemployment, cultural isolation and an inadequate safety net of services such as public hospitals and community health centers are over-represented in the child welfare system (Chow, et al., 2003; Landsverk, et al., 2002). Thus, it is vital for CPS agencies to provide or facilitate mental and physical health services to caregivers and children to ensure family wellbeing and reduce re-referrals.

Caregivers’ efforts to ensure health services for them or their child are important in the child welfare context as they are “active participants in the service experience and largely responsible for the changes sought by the agency” (Patti, 2000, p. 15). A lack of participation in decision-making during service planning may lower the caregiver’s perceived relevance of the services offered or referred to by the agency. These conditions in turn may partly account for a documented lack of health service use for themselves and/or for their child.

Caregivers’ investment in decision-making during service planning meetings may be increased by allowing their input regarding the family’s values, preferences, and needs before decisions are made by caseworkers and other professionals (Goodman, 1989). Higher caregiver investment may in turn increase his/her motivation to carry out those decisions, including the use of health services for themselves or for their children. In addition, when minority caregivers do not inform the decisions made, it is likely that the services provided or facilitated by CPS agencies are not culturally sensitive to the families’ needs (Briggs & McBeath, 2010).

Since the mid-1990s, some CPS agencies have taken action to increase family involvement through a family-centered approach to service practices. Some of these practices are called Family Group Decision-Making (FGDM), Family Team Conferencing, and the Unity Model. They differ mainly in how they structure the service process with families. In the Family Group Decision-Making service model, the family and the caseworker make collaborative decisions and the service planning process is led by a trained coordinator, who is independent of the CPS case (King, et al., 1998). In the Family

Team Conferencing model the family and the child's service team make joint decisions, and often the CPS caseworker serves as the team coordinator. Last, within a Unity Model families have a private meeting that does not include service providers to develop a service plan for their child prior to sharing with the service team (Halvorsen, 2003).

All three service practices share the fact that caregivers and family members are given the opportunity to work through their problems and devise solutions based on their own values, cultures, and needs, and to share their ideas with caseworkers and local service providers during service planning meetings (Merkel-Holguin, 2004). A family-centered approach to services is considered good practices for improving families' experiences and services during their involvement with the child welfare system (Merkel-Holguin, et al., 2003). These practices are in contrast to standard CPS procedures to serve families that include background checks of the adults living with the child to ensure the child's safety, periodic visits by a case worker to ensure that the child remains in a safe environment at home, and facilitation of voluntary services for the caregiver and/or the child if deemed necessary (Child Welfare Information Gateway., 2008). Through the standard practice, a caregiver invited to service planning meetings is often out-numbered by caseworkers and other professionals in the meetings and/or decisions are made in the family's absence altogether (Sheets, et al., 2009).

Despite evidence of positive changes in CPS-related services among families served through a family-centered service practice such as fewer out-of-home placements for children (Gunderson, et al., 2003; Pennell, 2006), there is still a dearth of information on the impact of these practices on caregiver and child use of health services (Williamson & Gray, 2011). Only two studies in the reviewed literature examined this association and they provided mixed results. Sundell and Vinnerljung (2004) found no difference in the use of counseling services among children and caregivers served through Family Group Decision-Making compared to those who were not served through this practice. This study faced limitations because authors used a small sample size and did not account for potential differences between families served through this service practices and those who were not (i.e., selection bias). A later study by Weigensberg and colleagues (2009) overcame these limitations by using a national sample of families involved with CPS agencies while accounting

for potential selection bias. Authors found that caregivers and children served through a family-centered practice had higher use of mental health services. However, researchers did not account for individual health needs or include physical health service use as a study outcome.

If, in fact, PDM service practices contribute to individual health service use, as Weigensberg and colleagues suggest, a high number of CPS agencies are missing an opportunity to better meet minority families' health needs—9% to 10% of CPS agencies nationwide have reported using family-centered service practices (McCrae & Fusco, 2010; Weigensberg, et al., 2009). It is also likely that child welfare service practices that are intended to increase caregiver participation in services actually rely on circumstantial evidence, local practices, and/or caseworker individual skillset. As a result, these conditions may decrease the cultural sensitivity of these practices and CPS agencies' ability to evaluate their effectiveness to reproduce those practices found to be effective.

In this study, we examine whether caregivers served through a family-centered service practice were more likely to use needed health services for themselves and/or for their child compared to caregivers who were not served through this practice. We addressed limitations from previous research by using a national sample of families served by CPS agencies, focusing on the majority (90%) of children involved with a CPS agency who remained with their caregivers (US Department of Health and Human Services., 2005), accounting for individual health need, and by examining mental and physical health service use as outcomes of interest. In addition, due to documented differences in the level of family risk between caregivers served and not served through a PDM service practice (Sundell & Vinnerljung, 2004), we addressed potential selection biases. The rich information on CPS agency practices and on caseworker, caregiver, and child/youth experiences available in the dataset provides a good fit for the use of propensity scores to match PDM vs. non-PDM groups of caregivers and children on observed characteristics.

The present study's findings will inform policy leaders and agency managers on whether there is an advantage in increasing health service use by including families in decision-making during the service planning process, compared to other practices. This information could provide support for the use of limited resources already invested in these PDM practices. These resources could include caseworker training and time used reaching out and scheduling meetings when caregivers and their

supports are available. In addition, research that increases our understanding of which service practices are better suited for vulnerable families is likely to be of interest to practitioners. Finally, the dissemination of our findings will provide support for caregivers' efforts to be included in the decisions made by service providers that impact their own and their children's health care.

1. Conceptual Framework

We hypothesized that caregivers served by a CPS agency through a family-centered service practice would be more likely than caregivers not served through these service practices to use mental and physical health services when needed. CPS agencies' efforts to increase participation are reflected in the development of family-centered practices that recognize caregivers as "experts in determining what is best for themselves and their children" (Child Welfare Information Gateway., 2012). These efforts are not unique to the child welfare sector. Patient-centered care has become a policy priority in the health sector in an effort to increase patients' engagement in the decisions related to their own care and positive health outcomes (Administration for Children and Families., 1998; Bryan, et al., 2007).

Drawing from the Participatory Decision Making (PDM) framework, participation in decision-making is expected to facilitate emotional and cognitive processes that likely impact individual behavior; in the present study, that is caregiver health-seeking behavior. These internal mediational processes were not tested in the present study. The PDM framework was originally conceptualized within the supervisor-worker(s) relationship in the corporate and service industries. Research in these sectors has shown that PDM decreases individuals' resistance to change and increases acceptance of goals and expected outcomes (Gambrill, 2008). In the present study, we extrapolated this framework to the child welfare context. We acknowledge differences between the supervisor-worker(s) and the caseworker-caregiver relationship within the CPS agency context, including a lack of financial compensation for caregiver participation in decision-making and the fact that family members often perceive CPS agency involvement as adversarial and unwelcomed. There are similarities between the supervisor-worker and caseworker-caregiver relationships. Similar to the supervisor role, the caseworker exerts a level of control over service referral and duration of the caregiver's involvement with the CPS agency. And similar to the worker role in industry, the caregiver

has practical and current knowledge of the situation at hand and direct responsibility for carrying out agreed-on activities.

A more detailed explanation of the internal mediational processes within the PDM framework that supports the proposed associations and how it has been applied to the child welfare context is provided below.

1.1. Emotional Facilitators

An individual's inclusion in the discussions that lead to decision-making reflects a formal recognition that the individual's ideas, preferences, and problem-solving abilities are valuable to the process. This participatory process itself reaffirms a key human social need for recognition and the perception of being valued (King, et al., 1998; Patti, 2000). Also, PDM likely leads to a higher individual understanding of one's role and expected goals (Patti, 2000). In turn, that understanding is likely to reflect an internalization of the joint goals—"they become one's personal goal," which may increase a commitment to those goals (Glisson & Hemmelgarn, 1998). An individual's goal commitment may foster the behaviors that are perceived as needed to reach the expected outcomes (Halvorsen, 2003). Empirical studies in the public government and education sectors have found an association between PDM and workers' emotional investment in the agency's goals and higher worker productivity (Biemer, et al., 2010; Duncan, et al., 2008).

1.2. Cognitive Facilitators

In general, PDM is expected to promote engagement in decision-making activities (Anderson & McDaniel, 1999). These activities involve an individual sharing: a) his/her understanding of the situation, b) expertise on what could work to solve a problem, and c) personal experiences with the issue at hand. Information exchange is also an activity present in PDM as individuals ask questions, clarify the problem, share and express disagreement with the prevailing views, and suggest solutions. This process is likely to increase the relevance of the decisions made as a group (Patti, 2000). In turn, individuals are expected to have a better understanding of why certain decisions have been made (Collins-Camargo, et al., 2009).

1.3. Participatory Decision-Making in the Child Welfare Context

The family-centered service practices of FGDM, Family Team Conferencing and Unity that are implemented by some CPS agencies are based on PDM. Under these PDM service practices, the caseworker shares decision-making with the caregiver(s), relatives, and other family supports during the service planning process. This shared responsibility is intended to promote agreement between caseworkers and caregivers based on an established partnership in decision-making (Connolly & McKenzie, 1999). In addition, caregivers are likely to feel recognized as valued partners throughout the process. In turn, they are more likely to seek services within a participatory context than if they feel blamed or scrutinized by the agency (Chen, et al., 2003).

There is evidence of the benefits of PDM to caregivers. A study conducted on the District of Columbia's CPS agency found that PDM was associated with caregivers having a higher understanding of the CPS service planning process and lower relational tension between families and caseworkers (Casanuevas, Horn, et al., 2011).

PDM also provides a problem-solving forum where caregivers and relatives can provide input to the decisions made by caseworkers and other professionals pertaining to the child's safety and well-being (Connolly, 1994; Connolly & McKenzie, 1999). These forums are also likely to inform individuals of their roles during their involvement with the CPS agency, the services available to them in their communities, and could serve as a roadmap for caregivers and family members throughout the process.

In summary, we suggest that caregiver participation in decision-making through a PDM service practice will increase health service use for caregiver and children.

Hypothesis 1: Compared to children and caregivers not served through a PDM service practice, children and caregivers served through PDM service practice will be more likely to use physical health services when needed.

Hypothesis 2: Children and caregivers served through PDM service practice will be more likely to use mental health services when needed compared to children and caregivers not served through a PDM service practice.

In addition to the previous proposed hypothesis, we implemented sub-group analyses on the impact of PDM service practices among two over-represented groups in the child welfare system: minority racial and ethnic groups and re-referred families. Available research on the impact of PDM service practices on health service use among minority families is limited and it has provided mixed results. Some studies have found no racial and ethnic differences (Crampton & Williams, 2000; Weigensberg, et al., 2009) while other research have shown differences in the impact of PDM service practices among racial and ethnic groups (McCrae & Fusco, 2010; Nqui & Flores, 2006). In this study, we propose that the effect of PDM service practices is moderated by racial and ethnic status. Thus, PDM service practices would have a higher effect on health care use among Blacks and Hispanic families served through PDM service practices compared to their White counterparts. These participatory service practices provide opportunities for caregivers to share their cultural values and health service preferences with caseworkers and other professionals during service planning meetings. This in turn is likely to increase the cultural relevance of those services for families and increase the likelihood of service use.

We also examined the impact of PDM service practices among re-referred families. Repeated contact with a CPS agency may increase caregivers' motivation to participate in decision-making and use of health services in an effort to avoid a subsequent CPS agency referral. We expected that the effect of a PDM service practice is moderated by case re-referral status. Thus, PDM service practice would have a higher effect on health care use among re-referred families served through PDM service practices compared to their counterparts.

Hypothesis 3: Minority and re-referred caregiver/children served through a PDM service practice will be more likely to use physical health services when needed compared to White families.

Hypothesis 4: Minority and re-referred caregiver/children served through a PDM service practice will be more likely to use mental health services when needed compared to White families.

2. Methods

2.1. Data Sources

All analyses in this study used data from the second cohort of the National Survey of Child Adolescent Well-being (NSCAW). NSCAW was the first national survey of children involved with child welfare agencies that included measures of CPS agency practices and characteristics as well as child and caregivers' physical, social, and psychological health (Dowd, 2010; Waldfogel, 2000). This survey was sponsored by the Administration for Children and Families, which is part of the U.S. Department of Health and Human Services. The NSCAW sampling frame reflected a two-stage stratified sample design. At the first stage, the United States was divided into sampling strata and primary sampling units (PSUs). PSUs were defined as geographic areas that covered the population served by one CPS agency. For the second stage, researchers used the PSUs as sampling frames for the selection of children into the NSCAW sample.

The NSCAW data file includes information from cases where child maltreatment was either confirmed (i.e., substantiated or indicated maltreatment) or not confirmed (i.e., unsubstantiated) by a CPS agency (Biemer, et al., 2010). NSCAW traced a vulnerable group of families in contact with CPS agencies and it was not designed to include all individuals receiving services from social services (e.g. Temporary Assistance for Needy Families or TANF). The NSCAW study included one child per household, regardless of any siblings who were also included in a CPS service plan. In addition to the focal child, sources of information in NSCAW included the permanent caregiver(s), the family's caseworker, and the local CPS agency director (NDACAN, 2010; Pennell & Burford, 2000). The caregiver was the unit of analysis, given this study's interest in examining whether caregiver inclusion in decision-making during service planning predicts individual health service use when needed. In addition, models at the individual level are more precise than at the CPS agency level, given the increased sample size. Measures were collected at baseline between March 2008 and September 2009. There is an average of 68 caregivers per agency who were interviewed at baseline and who had custody of the child at the time of the survey (range of interviewed custodial caregivers per agency: 3 to 417).

2.2. Sample

The full NSCAW sample was comprised of 4,112 caregivers who received services by a CPS agency. Given the scope of this study, the analytical sample was further restricted to caregivers of children who remained in the home ($n= 2,207$), who had custody of the child ($n=2,169$), and whose caseworker was also interviewed ($n=1,884$). For the model predicting child physical health service use, the sample was restricted to children ages 10 and younger ($n=1,591$). For these young children, the caregiver was identified as the key respondent for the NSCAW survey. Youth ages 11 and older were not included in this model because NSCAW did not include assessment of self-reported health need and health service use for this age group at baseline. Self-reported measures are preferred as more accurate measures of family need and services in the CPS context. Measures of youth health service use were available in NSCAW's wave 2. However, we did not include those measures because they were collected 18 months after the CPS investigation was open. Health service use within such timeline is not likely to be related to caregivers' decision-making during service planning at baseline. For the child mental health related models, the sample was restricted to ages 1.5–17 ($n=882$). There was a significant loss of observations when we restricted the models to this age range because children younger than 1.5 years comprise 45% of the NSCAW sample. Child and caregiver samples were analyzed separately.

2.3. Measures

2.3.1. Service use

Two separate outcome measures were used to assess health service use. We included measures on health service use for the past 12 months because that was the timeline available in the NSCAW survey. At the time of the survey at baseline, most families would have been involved with a CPS agency for only 6 months. It is possible that some families were already using services in the 6 months prior to CPS agency involvement. However, research has shown that involvement with a CPS agency is the best predictor of health service use for these families (dosReis, Zito, Safer, & Soeken, 2001; Hurlburt, et al., 2004). We also included a high number of covariates in the analyses to control for extraneous factors.

Physical health service use. A self-reported 1/0 binary measure reflected whether the caregiver visited a clinic or doctor about their own physical health in the past 12 months. For children ages 10 or younger, a separate 1/0 binary measure reflected whether the caregiver reported that his/her child saw a doctor or other health professional because of sickness or injury in the past 12 months.

Mental health service use. We operationalized this measure as a 1/0 binary variable indicating whether the caregiver had received the following services in the past 12 months: (a) one or more sessions of psychological counseling or therapy for emotional problems with any type of professional, (b) outpatient day treatment for mental health problems, and/or (c) prescription medication. A separate measure of the child's mental health service use was constructed from the National Comorbidity Survey items (Jones, 2004) and from the Child and Adolescent Services Assessment (Cahoon Byrnes, 2002). The 1/0 binary measure indicated whether the child ages 2–17 received the following services in the past 12 months: (a) in-home counseling services, (b) day treatment for emotional or behavioral problems, (c) clinic-based treatment (e.g., community mental health centers), (d) private professional services (including psychiatrists, psychologists, social workers, and psychiatric nurses), (e) prescription medication for emotional or behavioral problems, and/or (f) any kind of counseling from a school counselor, doctor, or therapist to help deal with feeling depressed or blue. Most of these items have been included in empirical child welfare studies (Burns, et al., 2004; Chapman, et al., 2003).

2.3.2. Inclusion of caregiver/family member in decision-making during service-planning meetings

This construct was measured through a 1/0 binary variable reflecting the caseworker's report that he/she used of any one of the following service practices with the family: (a) Family Group Decision-Making (FGDM), (b) Conferencing, or (c) Unity Model. The original categorical survey question was phrased as, "Please tell me how the placement decision or plan to ensure the safety of the child was made". Response options were: 1) Agency Team Staffing, 2) Family Group Decision-Making, Conferencing or Unity Model, 3) Caseworker Decision, 4) Police, 5) Cross-Agency Taskforce, or 6) Other. Response option # 2—Family Group Decision-Making, Conferencing or Unity Model—was

used as a measure of caregiver/family member inclusion in decision-making during service planning because those three models share the fact that caregivers, family members and community members are involved in the service planning process. In principle, when a caseworker reports using any of these three models, it is assumed that caregiver and family support, as well as support from other agencies involved in the case, was present during service planning meetings and that there was an active inclusion of those individuals in decision-making during the meetings (King, Feltey & O'Neil, 1998; Halvorsen, 2003).

We conditioned this variable on cases where the caregiver (i.e., mother, father, and stepparent) or family member (i.e., grandparent, other family relative) attended the service planning meeting as reported by the caseworker in another survey question. This approach has been previously used in the literature to increase the accuracy of this measure (Weigensberg, et al., 2009). Cases in which a caseworker reported using one of the three service models (i.e., FGDM, Conferencing, or Unity Model), but indicated that no family member was present at the service planning meetings were dropped from the analytic sample. These cases did not appear to be consistent with the expected PDM service model approach.

2.3.3. Other covariates

Several variables that may be associated with caregiver inclusion in decision-making and health service use were included to account for potential sources of endogeneity.

CPS agency characteristics. The following categorical variables were included to account for local health care provider availability (Hadley & Cunningham, 2004). For models predicting physical health service use, CPS agency directors were asked to rate the level of physical care service availability for children served by the agency using a 5-point Likert scale where “1”=“Not at all,” “2”=“Very little,” “3”=“Generally adequate,” “4”=“Adequate,” and “5”=“Very adequate.” We used this variable to also measure service availability for caregivers because a specific measure for this group was not included in NSCAW. It is likely that many caregivers receive services in the same local health care facility as their children. For models predicting mental health service use, CPS agency directors rated the level of mental health service availability for children and the level of service availability for caregivers using an identical 5-point Likert scale for each measure. In addition, a binary

(1/0) variable indicating that a CPS agency was located in an urban area accounted for differences in agency practices that may be explained by its location in a rural or urban setting. This variable was also used as a proxy measure for CPS agency size (Belanger & Stone, 2008; Landsman, 2002). Another binary (1/0) variable indicated whether an agency was operating under one or more consent decrees at the time of the NSCAW survey. A consent decree is defined in this study as a class action lawsuit or a court order related to child welfare practices. Agencies under a consent decree may be more likely to implement changes such as using PDM service practices as a result of a legal action (Smith & Donovan, 2003).

CPS case and individual characteristics. Several factors with potential influence over the type of services that caregivers and children received were included in the models. Three variables captured CPS case characteristics. First, family re-referral was measured as a 1/0 binary variable indicating that the family had a previous CPS agency investigation as a result of a report for possible child maltreatment as reported by the caseworker. Second, the type of child maltreatment was operationalized as a series of binary variables measuring the most serious type of maltreatment identified in the case. Types of maltreatment included physical abuse, sexual abuse, neglect, and other type of maltreatment such as emotional. Last, an additional series of binary variables reflected family risk factors and accounted for case characteristics. Family risk factors included the presence of domestic violence, caregiver substance abuse and recent arrests or detentions, and family difficulties in meeting basic needs (Kohl, Edleson, English, & Barth, 2005). Individual characteristics included continuous variables measuring caregiver and child age in years and binary (1/0) variables measuring gender, race/ethnicity and insurance status through four binary variables— public (i.e., Medicaid or Medicare), self-pay, private, and other (e.g., military insurance such as CHAMPS).

3. Data Analysis

NSCAW has a hierarchical survey structure where families and caseworkers are nested within CPS agencies, which may appear to indicate a multi-level analytical approach (Rabe-Hesketh & Skrondal, 2005). However, this random effects or multi-level approach, which is based on large-sample theory, may not be the best fit for NSCAW survey data with an agency sample size of fewer than 100 observations. Violation of the multi-level assumptions creates a source of bias for the

estimates. Preliminary one-way analysis of variance indicated relatively low variation (5%) in a dependent variable across agencies (Paul, 1990). In addition, the role of *upstream* agency level factors such as an agency's shared service values and rules is beyond the scope of this study. Thus, all regression models were analyzed as single-level, cross-sectional models, while accounting for NSCAW's complex survey design using STATA's SVY module (Biemer, et al., 2008; NDACAN, 2010). The Stata SVY module accounts for individual probability weights, stratification, and clustering of caregivers and caseworkers within CPS agencies (Simms, et al., 2000).

We conditioned the analytical logistic models on caregiver and child health need. For the models predicting physical health service use, we identified caregivers as needing health services using a 5-point Likert scale variable where the caregiver self-rated his/her general health as "1"="Excellent," "2"="Very good," "3"="Good," "4"="Fair," or "5"="Poor." We constructed a (1/0) binary variable for data analyses where 1 = if the caregiver rated his/her health as fair or poor, and 0=if the caregiver rated his/her health as excellent, very good, or good at the time of the survey. This survey question is part of the Short-Form Health Survey (SF-12) to measure physical health status (Ware Jr, Kosinski, & Keller, 1996). This approach to measuring health status in NSCAW has been previously used in the literature (Casanuevas, Cross, Ringeisen, & Christ, 2011). Child health need was measured through a constructed binary variable coded as 1=if the caregiver identified his/her child as having fair or poor general health, with an identical 5-point response category as in the caregiver question, and/or having to be hospitalized in the past 12 months due to a current health or medical condition.

For the models predicting mental health service use, we identified caregivers in need of services by constructing a (1/0) binary variable coded 1=if the caregiver has any of the following: (a) a clinical score reflecting a major depressive episode as measured by the Composite International Diagnostic Interview-Short Form (CIDI-SF) (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998), and/or (b) caseworker report at baseline that the caregiver had a serious mental health or emotional problem at the time of the CPS investigation. This approach to measure mental health need has been previously used in the literature (Casanuevas, Cross, et al., 2011). Child/youth mental health need as a binary variable coded 1=if the child had a clinical score ($t=64$ or higher) in the internalizing or

externalizing scales on any one of the following measures: (a) Youth self-report (YSR) for ages 11 and older, and/or (b) caregiver report in the Child Behavior Checklist (CBCL) for children 1.5 to 10 years of age (Achenbach & Edelbrock, 1991). The CBCL measure has been widely used in the literature to measure mental health needs (Hurlburt, et al., 2004).

Descriptive characteristics were estimated using Stata 12's SVY command to reflect statistics that were representative of caregivers involved with CPS agencies in the United States (Biemer et al., 2008; StataCorp, 2007). Pearson and tetrachoric correlations between predictors were $r=0.45$ or less and tolerance checks did not indicate multicollinearity concerns (Allison, 1999). Multivariate regression analyses were implemented using Stata 12's SVY command to account for NSCAW's complex survey design. Logistic models were used given the binary nature of the dependent variables. To examine model fit, the linktest, Hosmer and Lemeshow (GOF), and the Akaike Information Criterion (AIC) tests were employed in the analyses (Cameron & Trivedi, 2009). This study's secondary data analysis was approved by the Institutional Review Board at the first author's academic institution. The NSCAW survey study was originally approved by the Institutional Review Board at RTI International.

Observational studies are prone to violating the assumption of ignorable treatment assignment because participants are not randomly assigned to a treatment as opposed to a comparison group. In this study, families served through a PDM service practice were not randomly assigned. Instead, a "bureaucratic selection" (Guo & Fraser, 2009), in this case by the service caseworker, was implemented based on the child and caregiver's characteristics including risk level. Studies without a well-formed comparison group have a high risk of bias, particularly in assessing the benefits of a service practice (Norris et al., 2011).

The ideal approach to address selection bias in an observational study like NSCAW is the use of a two-stage residual inclusion approach that uses an instrumental variable(s) to account for observed and unobserved differences between the groups (Terza, Basu, & Rathouz, 2008). We tested two logical potential instrumental variables but they were not strongly correlated to the main predictor. This approach was discarded because weak instruments can bias the estimates (Waldfoegel, 1998).

The next option considered was the implementation of a data balancing method. We implemented a conventional method for handling observational data—propensity scores using data matching (Guo & Fraser, 2009). This correction technique estimates the probability of caregiver assignment to a PDM service practice given a number of measured characteristics. When measured characteristics capture selection effects, this method makes it possible to achieve unbiased estimates in regression models (Guo & Fraser, 2009). Thus, this approach does not control for potential unobserved bias. The NSCAW data are ideally suited for the use of propensity scores given the rich array of observed variables available with information about CPS case characteristics and family socio-demographics and risk factors. We implemented the propensity score matching model following a three-step analytic process (D’Agostino, 1998).

First, we estimated the propensity score using a logistic regression with the dependent binary being the log odds $[(1-p)/p]$ of a caregiver probability of being served through a PDM service practice. We selected a number of matching variables that included demographic characteristics, family risk factors and case characteristics. We selected these variables based on the literature because they were expected to be associated with caregiver receipt of a PDM service practice. Thus, a pair of caregivers served through a PDM service practice and those caregivers not served through this practice, respectively who share a similar propensity score are viewed as comparable (Guo & Fraser, 2009). Second, we used the estimated propensity scores to match pairs of caregivers using greedy matching nearest neighbor without replacement. Greedy matching is a type of data balancing method where after obtaining the estimated propensity scores, a new sample is created that share approximately similar likelihoods of being assigned to the program in question (Guo & Fraser, 2009). In this study that is being served through a PDM service practice. We used STATA 12/PSMATCH2 and a caliper size of one-quarter of the standard deviation of the propensity scores as recommended in the literature (Rosenbaum & Rubin, 1985). A caliper is the absolute distance of propensity scores between a pair of caregivers that is determined by the researcher for matching. Through this approach, unmatched individuals are discarded, therefore reducing the number of observations in the new matched sample. To avoid a high loss of observations, we use 1-to-4 nearest neighbor which means every caregiver served through a PDM practice was matched from a pool of four similar

caregivers who were not served through this practice. For our last step, we used bivariate analyses on the matched sample to confirm comparability between PDM and non-PDM served caregivers. We followed this sequential analysis for each of the regression models: caregiver physical and mental health and child physical and mental health.

Using matched samples, we tested the proposed relationships using parsimonious multivariate logistic regression models that included the focal variables of interest while incorporating NSCAW's weights and complex survey design. We incorporated NSCAW's weights and complex survey design after propensity score matching because during propensity score development we are only matching observations and not making population-based inferences. However, for the final analytical models, we are, in fact, making population-based estimations and hence the need to incorporate the survey weights (Zanutto, 2006). We conducted sensitivity checks to assess the robustness of our findings by also running reduced models with PDM service practice as the only predictor in the model, and by running multivariate logistic regression models that included the variables presented in Tables 4.1 and 4.2 and using the unmatched sample. The results of these models were consistent with the propensity score adjusted models except for children use of health services. In the logistic regression with the un-matched sample, caregiver participation in decision-making significantly predicted child physical health service use (OR 6.39, $p=0.006$). However, this high odds ratio estimate and a wide 95% confidence interval (1.75–23.38) may reflect a poor fit of this logistic model for these data.

Sub-group analyses were also implemented based on racial/ethnic groups (i.e., White, Black, and Hispanic) and on whether the family had a previous contact with the CPS agency using Wald F tests. The null hypothesis for these F tests is that the effect of PDM service practices on health service use is not a function of race or re-referral case status.

4. Results

We assessed potential differences between the groups of caregivers served through a PDM service practice and those who were not served through this practice by running bivariate analysis on several caregiver and child characteristics available in the NSCAW data file. Table 4.1 displays the results of these analyses by PDM service practice status for the caregiver physical and mental health

models and using the unmatched propensity score sample. Table 4.2 presents the same results for the child models. Analyses are presented separately for physical and for mental health service models on each table because the set of relevant covariates used for propensity score matching and for the final analytical analyses differs between the models.

Of the sample of families served through a CPS agency and whose children remained in the home, 209 (13%) of caregivers and 208 (12.9%) of children were served through a PDM service practice during service planning as reported by the caseworker. Table 4.1 shows that caregivers served through a PDM service practice were significantly different ($p < 0.05$) from those not served through a PDM practice in age, level of cooperation at the time of the investigation, family's ability to pay for basic necessities (e.g., housing and food), and active domestic violence in the home for both physical and mental health related models. Overall, cases served through a PDM service practice had on average slightly younger caregivers and a lower percentage of caregivers with low cooperation during the investigation, having trouble paying for basic necessities and experiencing domestic violence in the home.

Table 4.2 displays significant differences ($p < 0.05$) in the child sample between cases served through a PDM service practice and those not served through a PDM service practice on the caregiver's level of cooperation during the investigation, active domestic violence in the home, and family re-referral only for the mental health-related model. Overall, cases served through a PDM service practice for this child sample had differences on the same variables as the caregiver sample except for differences in the children's age between groups.

Table 4.1.

Pre-Matched NSCAW Sample Descriptive Characteristics for Custodial Caregivers Served by a CPS Agency

Characteristic	Matching covariates for the physical health service model				Matching covariates for the mental health service model			
	Total sample	PDM Service	No PDM Service	P-value	Total sample	PDM Service	No PDM Service	P-value
	n (percent)	n (percent)	n (percent)		n (percent)	n (percent)	n (percent)	
Total number of caregivers	1,612 (100)	209 (13.0)	1,403 (87.0)		1,611 (100)	208 (12.9)	1,403 (87.1)	
Age in years (Average/SE)	29.45 (0.20)	28.34 (0.51)	29.61 (0.22)	0.032*	29.44 (0.20)	28.3 (0.50)	29.6 (0.22)	0.002**
Gender								
Female	1,489 (92.4)	187 (12.6)	1,302 (87.4)	0.091	1,488 (92.4)	186 (12.5)	1,302 (87.5)	0.087
Male	123 (7.6)	22 (17.9)	101 (82.1)		123 (7.6)	22 (17.9)	101 (82.1)	
Racial and ethnic group								
White/non-Hispanic	706 (43.8)	91 (12.9)	615 (87.1)	0.727	705 (43.8)	90 (12.8)	615 (87.2)	0.723
Black/Non-Hispanic	392 (24.4)	46 (11.7)	346 (88.3)		392 (24.3)	46 (11.7)	346 (88.3)	
Hispanic	350 (21.7)	46 (13.1)	304 (86.9)		350 (21.7)	46 (13.1)	304 (86.9)	
American Indian/Pacific Islander	132 (8.19)	20 (15.2)	112 (84.6)		132 (8.2)	20 (15.2)	112 (84.9)	
Other	32 (1.91)	6 (18.8)	26 (81.3)		32 (2.0)	6 (18.7)	26 (81.2)	
Type of health care								
Public (i.e., Medicaid or Medicare)	817 (50.7)	108 (13.2)	709 (86.8)	0.533	817 (50.7)	108 (13.2)	709 (86.8)	0.609
Uninsured / Self-pay	456 (28.3)	54 (11.8)	402 (88.2)		456 (28.3)	54 (11.8)	402 (88.2)	
Private insurance	211 (13.1)	33 (15.6)	178 (84.4)		210 (13.0)	32 (15.2)	178 (84.8)	
Other (e.g., CHAMPS)	124 (7.8)	14 (11.3)	110 (88.7)		124 (7.7)	14 (11.3)	110 (88.7)	
Family risk factors								
Caregiver has recent history of arrests	285 (17.7)	38 (13.3)	247 (86.7)	0.838	284 (17.6)	37 (13.0)	247 (87.0)	0.948
Caregiver has intellectual/cognitive impairment	85 (5.3)	14 (16.5)	71 (83.5)	0.323	85 (5.3)	14 (16.5)	71 (83.5)	0.315
Caregiver has any physical impairment	76 (4.7)	11 (14.5)	65 (85.5)	0.688	76 (4.7)	11 (14.5)	65 (85.5)	0.677
Caregiver has own history of abuse or neglect	417 (25.9)	57 (13.7)	360 (86.3)	0.619	416 (25.8)	56 (13.5)	360 (86.5)	0.698
Caregiver low cooperation during investigation	134 (8.3)	28 (20.9)	106 (79.1)	0.004**	133 (8.3)	27 (20.3)	106 (79.7)	0.008**
High stress in the family	1,016 (63.0)	142 (14.0)	874 (86.0)	0.115	1,015 (63.0)	141 (13.9)	874 (86.1)	0.126
Low social support	524 (32.5)	66 (12.6)	458 (87.4)	0.759	523 (32.5)	65 (12.4)	458 (87.6)	0.689
Family has trouble paying for basic necessities	540 (33.5)	84 (15.6)	456 (84.4)	0.028*	540 (33.5)	84 (15.6)	456 (84.4)	0.025*
Active domestic violence in the home	302 (18.7)	52 (17.2)	250 (82.8)	0.015*	302 (18.7)	52 (17.2)	250 (82.8)	0.013*
Health need								
Physical health need	404 (25.0)	47 (11.6)	357 (88.4)	0.357	-	-	-	-

Mental health need	-	-	-	-	619 (38.4)	92 (14.9)	527 (85.1)	0.065
Family re-referral	780 (48.4)	106 (13.6)	674 (86.4)	0.502	779 (48.4)	105 (13.5)	674 (86.5)	0.544
Most serious type of maltreatment								
Physical abuse	270 (16.7)	30 (11.1)	240 (88.9)	0.555	270 (16.8)	30 (11.1)	240 (88.9)	0.590
Sexual abuse	77 (4.8)	10 (13.0)	67 (87.0)		77 (4.8)	10 (13.0)	67 (87)	
Neglect	487 (30.2)	59 (12.1)	428 (87.9)		487 (30.3)	59 (12.1)	428 (87.9)	
Other type of maltreatment (e.g., emotional)	778 (48.3)	110 (14.1)	668 (85.9)		777 (48.2)	109 (14.0)	668 (86.0)	

*p<0.05; **p<0.01

Table 4.2.

Pre-Matched Sample Descriptive Characteristics for Children Served by a CPS Agency and Who Remained at Home

Characteristic	Matching covariates for the physical health service model				Matching covariates for the mental health service model			
	Total sample	PDM Service	No PDM Service	P-value	Total sample	PDM Service	No PDM Service	P-value
	n (percent)	n (percent)	n (percent)		n (percent)	n (percent)	n (percent)	
Total number of children	1,358 (100)	184 (13.6)	1,174 (86.5)		855 (100)	102 (11.9)	753 (88.1)	
Age in years (Average/SE)	2.28 (0.08)	2.11 (0.23)	2.31 (0.09)	0.423	8.40 (0.15)	8.04 (0.41)	8.45 (0.17)	0.380
Gender								
Female	661 (0.49)	95 (14.4)	566 (85.6)	0.388	428 (0.50)	52 (12.2)	376 (87.9)	0.843
Male	697 (0.51)	89 (12.8)	608 (87.2)		427 (0.50)	50 (11.7)	377 (88.3)	
Racial and ethnic group								
White/non-Hispanic	455 (0.34)	60 (13.2)	395 (86.8)	0.820	366 (0.43)	34 (9.3)	332 (90.7)	0.160
Black/Non-Hispanic	375 (0.28)	46 (12.3)	329 (87.8)		198 (0.23)	23 (11.6)	175 (88.4)	
Hispanic	377 (0.28)	57 (15.1)	320 (84.9)		180 (0.21)	30 (16.7)	150 (83.3)	
American Indian/Pacific Islander	125 (0.09)	18 (14.4)	107 (85.6)		90 (0.11)	12 (13.3)	78 (86.7)	
Other	26 (0.02)	3 (11.5)	23 (88.5)		21 (0.02)	3 (14.3)	18 (85.7)	
Type of health care								
Public (i.e., Medicaid or Medicare)	1,108 (0.82)	146 (13.2)	962 (86.8)	0.822	643 (0.75)	73 (11.4)	570 (88.7)	0.174
Uninsured / Self-pay	88 (0.06)	13 (14.8)	75 (85.2)		70 (0.08)	11 (15.7)	59 (84.3)	
Private insurance	128 (0.09)	19 (14.8)	109 (85.2)		128 (0.15)	14 (11.0)	114 (89.1)	
Other (e.g., CHAMPS)	34 (0.03)	6 (17.7)	28 (82.4)		14 (0.02)	4 (28.6)	10 (71.4)	
Family risk factors								
Caregiver has recent history of arrests	256 (0.19)	33 (12.9)	223 (87.1)	0.732	138 (0.16)	18 (13.0)	120 (87.0)	0.659
Caregiver has intellectual/cognitive impairment	78 (0.06)	14 (18.0)	64 (82.0)	0.242	42 (0.05)	7 (16.7)	35 (83.3)	0.331
Caregiver has any physical impairment	57 (0.04)	10 (17.5)	47 (82.5)	0.368	54 (0.06)	7 (13.0)	47 (87.0)	0.809
Caregiver has own history of	369 (0.27)	49 (13.3)	320 (86.7)	0.859	179 (0.21)	27 (15.0)	152 (85.0)	0.143

abuse or neglect								
Caregiver low cooperation during investigation	111 (0.08)	25 (22.5)	86 (77.5)	0.004*	86 (0.10)	17 (19.8)	69 (80.2)	0.018*
High stress in the family	865 (0.64)	124 (14.3)	741 (85.7)	0.262	530 (0.62)	71 (13.4)	459 (86.6)	0.091
Low social support	443 (0.33)	56 (12.6)	387 (87.4)	0.496	291 (0.34)	40 (13.8)	251 (86.3)	0.239
Family has trouble paying for basic necessities	457 (0.34)	72 (15.8)	385 (84.2)	0.091	293 (0.34)	40 (13.7)	253 (86.4)	0.262
Active domestic violence in the home	265 (0.20)	46 (17.4)	219 (82.6)	0.043*	143 (0.17)	26 (18.2)	117 (81.8)	0.011*
Health need								
Physical health need	166 (0.12)	29 (17.5)	137 (82.5)	0.115	-	-	-	-
Mental health need	-	-	-	-	315 (0.37)	34 (10.8)	281 (89.2)	0.434
Family re-referral	618 (0.46)	88 (14.2)	530 (85.8)	0.512	520 (0.61)	73 (14.0)	447 (86.0)	0.018*
Most serious type of maltreatment								
Physical abuse	213 (0.16)	26 (12.2)	187 (87.8)	0.655	182 (0.21)	15 (8.2)	167 (91.8)	0.192
Sexual abuse	48 (0.04)	8 (16.7)	40 (83.3)		78 (0.09)	10 (12.8)	68 (87.1)	
Neglect	418 (0.31)	52 (12.4)	366 (87.6)		272 (0.32)	30 (11.0)	242 (89.0)	
Other type of maltreatment (e.g., emotional)	679 (0.50)	98 (14.4)	581 (85.6)		323 (0.38)	47 (14.6)	276 (85.5)	

*p<0.05; **p<0.01

Table 4.3.

Post-Matched Sample Descriptive Characteristics for Custodial Caregivers Served by a CPS Agency

Characteristic	Matching covariates for the physical health service model				Matching covariates for the mental health service model			
	Total sample	PDM Service	No PDM Service	P-value	Total sample	PDM Service	No PDM Service	P-value
	n (percent)	n (percent)	n (percent)		n (percent)	n (percent)	n (percent)	
Total number of caregivers	406 (100)	227 (56.0)	179 (44.0)		414 (100)	230 (55.6)	184 (44.4)	
Age in years (Average/SE)	28.8 (0.37)	29.4 (0.57)	28.3 (0.49)	0.158	28.5 (0.36)	28.4 (0.48)	28.7 (0.54)	0.662
Gender								
Female	375 (0.92)	205 (54.7)	170 (45.3)	0.079	375 (0.91)	205 (54.7)	170 (45.3)	0.259
Male	31 (0.08)	22 (71.0)	9 (29.0)		39 (0.09)	25 (64.1)	14 (35.9)	
Racial and ethnic group								
White/non-Hispanic	182 (0.45)	101 (55.5)	81 (44.5)	0.929	179 (0.43)	98 (54.8)	81 (45.3)	0.871
Black/Non-Hispanic	96 (0.24)	52 (54.2)	44 (45.8)		89 (0.21)	49 (55.1)	40 (44.9)	
Hispanic	88 (0.22)	49 (55.7)	39 (44.3)		93 (0.22)	50 (53.8)	43 (46.2)	
American Indian/Pacific Islander	30 (0.07)	19 (63.3)	11 (36.7)		41 (0.10)	26 (63.4)	15 (36.6)	
Other	10 (0.02)	6 (60.0)	4 (40.0)		12 (0.03)	7 (58.3)	5 (41.7)	
Type of health care								
Public (i.e., Medicaid or Medicare)	213 (0.52)	116 (54.5)	97 (45.5)	0.714	211 (0.51)	118 (55.9)	93 (44.1)	0.633

Uninsured / Self-pay	110 (0.27)	65 (59.1)	45 (40.9)		108 (0.26)	58 (53.7)	50 (46.3)	
Private insurance	55 (0.14)	33 (60.0)	22 (40.0)		63 (0.15)	34 (54.0)	29 (46.0)	
Other (e.g., CHAMPS)	26 (0.06)	13 (50.0)	13 (50.0)		30 (0.07)	20 (66.7)	10 (33.3)	
Family risk factors								
Caregiver has recent history of arrests	75 (0.18)	44 (58.7)	31 (41.3)	0.595	74 (0.18)	39 (52.7)	35 (47.3)	0.586
Caregiver has intellectual/cognitive impairment	20 (0.05)	15 (75.0)	5 (25.0)	0.078	23 (0.06)	15 (65.2)	8 (34.8)	0.337
Caregiver has any physical impairment	16 (0.04)	10 (62.5)	6 (37.5)	0.588	22 (0.05)	12 (54.6)	10 (45.5)	0.922
Caregiver has own history of abuse or neglect	111 (0.27)	59 (53.2)	52 (46.8)	0.492	114 (0.28)	62 (54.4)	52 (45.6)	0.768
Caregiver low cooperation during investigation	36 (0.09)	24 (66.7)	12 (33.3)	0.173	47 (0.11)	29 (61.7)	18 (38.3)	0.368
High stress in the family	253 (0.62)	142 (56.1)	111 (43.9)	0.911	273 (0.66)	160 (58.6)	113 (41.4)	0.082
Low social support	125 (0.31)	70 (56.0)	55 (44.0)	0.981	140 (0.34)	75 (53.4)	65 (46.4)	0.561
Family has trouble paying for basic necessities	148 (0.36)	84 (56.8)	64 (43.2)	0.795	167 (0.40)	91 (54.5)	76 (45.5)	0.720
Active domestic violence in the home	93 (0.23)	55 (59.1)	38 (40.9)	0.475	98 (0.24)	59 (60.2)	39 (39.8)	0.289
Health need								
Physical health need	96 (0.24)	50 (52.1)	46 (48.0)	0.387	-	-	-	-
Mental health need	-	-	-	-	177 (0.43)	104 (58.8)	73 (41.2)	0.257
Family re-referral	201 (0.50)	115 (57.2)	86 (42.8)	0.705	211 (0.51)	116 (55.0)	95 (45.0)	0.816
Most serious type of maltreatment								
Physical abuse	72 (0.18)	34 (47.2)	38 (52.8)	0.440	57 (0.14)	31 (54.4)	26 (45.6)	0.987
Sexual abuse	22 (0.05)	13 (59.1)	9 (40.9)		21 (0.05)	11 (52.4)	10 (47.6)	
Neglect	114 (0.28)	66 (57.9)	48 (42.1)		118 (0.29)	66 (55.9)	52 (44.1)	
Other type of maltreatment (e.g., emotional)	198 (0.49)	114 (57.6)	84 (42.4)		218 (0.53)	122 (56.0)	96 (44.0)	

*p<0.05; **p<0.01

Table 4.4.

Post-Matched Sample Descriptive Characteristics for Children Who Remained at Home and Who Were Served by a CPS Agency

Characteristic	Matching covariates for the physical health service model				Matching covariates for the mental health service model			
	Total sample	PDM Service	No PDM Service	P-value	Total sample	PDM Service	No PDM Service	P-value
	n (percent)	n (percent)	n (percent)		n (percent)	n (percent)	n (percent)	
Total number of children	362 (100)	197 (54.4)	165 (45.6)		200 (100)	106 (53.0)	94 (47.0)	
Age in years (Average/SE)	2.19 (0.16)	2.01 (0.21)	2.40 (0.25)	0.232	8.31 (0.30)	8.09 (0.41)	8.55 (0.46)	0.452
Gender								
Female	176 (0.49)	99 (56.3)	77 (43.8)	0.496	96 (48)	55 (57.3)	41 (42.7)	0.243
Male	186 (0.51)	98 (52.7)	88 (47.3)		104 (0.52)	51 (49.0)	53 (51.0)	

Racial and ethnic group								
White/non-Hispanic	126 (0.35)	66 (52.4)	60 (47.6)	0.914	84 (0.42)	36 (42.9)	48 (57.1)	0.171
Black/Non-Hispanic	95 (0.26)	51 (53.7)	44 (46.3)		41 (0.21)	24 (58.5)	17 (41.5)	
Hispanic	102 (0.28)	57 (55.9)	45 (44.1)		46 (0.23)	29 (63.0)	17 (37.0)	
American Indian/Pacific Islander	31 (0.09)	19 (61.3)	12 (38.7)		23 (0.12)	13 (56.2)	10 (43.5)	
Other	8 (0.02)	4 (50.0)	4 (50.0)		6 (0.03)	4 (66.7)	2 (33.3)	
Type of health care								
Public (i.e., Medicaid or Medicare)	283 (0.78)	157 (55.5)	126 (44.5)	0.158	148 (0.74)	76 (51.4)	72 (48.7)	0.254
Uninsured / Self-pay	37 (0.10)	14 (37.8)	23 (62.2)		24 (0.12)	12 (50.0)	12 (50.0)	
Private insurance	32 (0.09)	20 (62.5)	12 (37.5)		24 (0.12)	14 (58.3)	10 (41.7)	
Other (e.g., CHAMPS)	10 (0.03)	6 (60.0)	4 (40.0)		4 (.02)	4 (100)	0 (0)	
Family risk factors								
Caregiver has recent history of arrests	76 (0.21)	34 (44.7)	42 (55.3)	0.057	31 (0.16)	18 (58.1)	13 (41.9)	0.539
Caregiver has intellectual/cognitive impairment	23 (0.06)	15 (65.2)	8 (34.8)	0.283	10 (0.05)	6 (60.0)	4 (40.0)	0.649
Caregiver has any physical impairment	15 (0.04)	10 (66.7)	5 (33.3)	0.331	19 (0.10)	8 (42.1)	11 (57.9)	0.317
Caregiver has own history of abuse or neglect	107 (0.30)	52 (48.6)	55 (51.4)	0.150	51 (0.26)	29 (56.9)	22 (43.1)	0.522
Caregiver low cooperation during investigation	44 (0.12)	26 (59.1)	18 (40.9)	0.507	28 (0.14)	15 (53.6)	13 (46.4)	0.948
High stress in the family	252 (0.70)	136 (54.0)	116 (46.0)	0.794	142 (0.71)	76 (53.5)	66 (46.5)	0.817
Low social support	126 (0.35)	65 (51.6)	61 (48.4)	0.429	79 (0.40)	43 (54.4)	36 (45.6)	0.743
Family has trouble paying for basic necessities	141 (0.39)	78 (55.3)	63 (44.7)	0.784	75 (0.38)	39 (52.0)	36 (48.0)	0.826
Active domestic violence in the home	82 (0.23)	47 (57.3)	35 (42.7)	0.549	37 (0.19)	24 (64.9)	13 (35.1)	0.109
Health need								
Physical health need	49 (0.14)	31 (63.4)	18 (36.7)	0.181	-	-	-	-
Mental health need	-	-	-	-	70 (0.35)	35 (50.0)	35 (50.0)	0.533
Family re-referral	180 (0.50)	94 (52.2)	86 (47.8)	0.459	136 (0.68)	75 (55.2)	61 (44.9)	0.510
Most serious type of maltreatment								
Physical abuse	58 (0.16)	28 (48.3)	30 (51.7)	0.157	37 (0.19)	16 (43.2)	21 (56.8)	0.230
Sexual abuse	12 (0.03)	9 (75.0)	3 (25.0)		14 (0.07)	10 (71.4)	4 (28.6)	
Neglect	108 (0.30)	53 (49.1)	55 (50.9)		67 (0.34)	33 (49.3)	34 (50.7)	
Other type of maltreatment (e.g., emotional)	184 (0.51)	107 (58.2)	77 (41.9)		82 (0.41)	47 (57.3)	35 (42.7)	

*p<0.05; **p<0.01

Given the identified group differences, we conducted propensity score matching using the NSCAW analytical sample presented in Tables 4.1 and 4.2 to account for selection bias. The results of bivariate post-matching analysis on caregiver and child characteristics are presented in Tables 4.3 and 4.4 respectively. These tables present smaller sample sizes than the ones displayed in previous tables because unmatched cases were discarded from the sample during the propensity score matching process.

Tables 4.3 and 4.4 show no significant statistical differences on the matched samples between caregivers served through a PDM service practice and those who were not served through a PDM service practice on the observed covariates. Thus, we implemented parsimonious logistic regression models to examine the effect of PDM service practices on caregiver and child health service use on these balanced matched samples. We included in these regression models the following covariates: (a) one binary variable for Blacks and Hispanics (Whites as referent), (b) one binary variable denoting that the case was a re-referral, and (b) three agency characteristics indicating that a CPS agency was located in an urban area, operating under one or more consent decrees, and the agency director's perceived availability of health services for the families served.

Table 4.5.

Bivariate Analyses for Hypothesis Testing on Health Service Use for the Matched NSCAW Samples

	Caregiver model			Child model		
	PDM Service	No PDM Service	P-value	PDM Service	No PDM Service	P-value
	n (weighted percent)	n (weighted percent)		n (weighted percent)	n (weighted percent)	
Physical health services (n)	227	179		197	165	
Services used in the past 12 months	71 (31.7)	68 (37.9)	0.52	116 (59.0)	66 (40.0)	0.004 **
Mental health services (n)	230	184		106	94	
Services used in the past 12 months	54 (23.3)	56 (30.6)	0.30	25 (23.3)	29 (31.0)	0.304

In Table 4.5, we present mean comparisons between the groups of caregivers and children served through a PDM service practice and the groups not served through these practices on physical and mental health service use. As shown in the table, health service use (i.e., physical and mental health) was not significantly different between caregivers served through a PDM service practice and those who were not served through that practice during service planning meetings. For

the child sample, children ages 10 and younger whose families were served through a PDM service practice had a higher percentage of cases with a self-reported use of physical health services in the past 12 months ($p < 0.01$).

Significant differences in child physical health service use disappeared when controlling for other factors. As shown in Table 4.6, findings from the multivariate analyses did not support the proposed hypotheses. For the models predicting physical and mental health service use, multivariate findings did not support the proposed hypotheses. PDM service practice was not a significant predictor of physical health service use and it was not a predictor of mental health service use for either the caregiver or for the child models at a conventional 5% significance level. These results were consistent with reduced regression models and with separate multivariate logistic regression models implemented in the pre-matched sample and using the variables presented in Tables 4.1 and 4.2 as covariates. These reduced and multivariate models were conducted as sensitivity checks and are not presented in this paper.

Table 4.6.

Multivariate Analyses of Physical and Mental Health Service Use Using Matched Samples

Caregiver Models		Children Models	
Physical health service use (n= 391)	Mental health service use (n = 405)	Physical health service use (n= 352)	Mental health service use (n = 191)
OR 1.53, $p = 0.54$	OR 0.72, $p = 0.54$	OR 20.11, $p = 0.52$	OR 2.49, $p = 0.42$
Each model controlled for race/ethnicity, family re-referral, agency urban location, consent decree and service provider availability in the area			

The multivariate logistic model predicting child mental health service use and using the unmatched child sample ($n=332$) provided a highly significant estimate (OR 6.39, $p < 0.01$). These results were consistent with previous literature (Weigensberg, et al., 2009). However, the confidence interval for this estimate was very wide (95% CI: 1.75-23.37) indicating a potential poor fit of this model with the unmatched data sample. These results are not presented in this paper.

Sub-group analyses were implemented by interacting PDM service practice with case re-referral and with each of the following binary race variables—Whites (referent), African American, and

Hispanic, American Indian/Pacific Islander or 'Other' ethnic/racial groups were not included in these analyses due to the small sample size in the matched samples. F-tests showed racial differences on the impact of PDM service practices on mental health service use among caregivers ($p=0.01$), and racial differences on the impact of PDM service practices on child physical health services use ($p=0.0007$). Additional analyses to estimate the magnitude of these differences were not implemented due to the low sample size and lack of power in the models.

5. Discussion

Bivariate analyses of the analytical pre-matched sample of caregiver and children showed that families served through a PDM service practice were significantly different, from those not served through these practices in several characteristics. PDM service practice cases had on average slightly younger caregivers in terms of age as well as a lower percentage of cases with un-cooperative caregivers during the investigation, families unable to meet their basic necessities, and domestic violence in the home. These results suggest that caseworkers may be selecting cases with certain characteristics where they may determine that a PDM service practice will be more successful in terms of reaching consensus in decision-making and being able to have caregivers and their supports attend the service planning meetings. These findings are consistent with other studies showing that families with certain characteristics are more likely to be served through a PDM service practice in the child welfare system (Crampton & Williams, 2000; Sundell & Vinnerljung, 2004; Weigensberg, et al., 2009). A lack of available national research and practice guidelines on which CPS cases may be more suitable for a PDM service practice may in part explain this study's findings.

Given these differences in the characteristics of the cases served through a PDM service practices versus cases not served through these practices, we implemented propensity score matching to address selection bias. Bivariate analyses on the matched samples provided the following results.

For caregivers' use of health services, hypothesis testing using logistic models that accounted for re-referral case status, race, and agency characteristics with the matched samples did not find PDM service practice to be a significant predictor of physical and mental health service use.

For children's use of health services, mean differences between PDM service practice and no PDM service practice groups showed significant differences only for child physical health service use. A higher percentage of child cases using physical health services in the past 12 months were served through a PDM service practice than those children not served through these practices. However, these differences disappeared when we implemented hypothesis testing through logistic regression models accounting for re-referral case status, race, and agency characteristics. An additional multivariate logistic regression model using the unmatched sample showed that PDM service practice predicted child mental health service use. This finding is consistent with previous research (Weigensberg, et al., 2009).

This surprising lack of significant findings for the caregiver sample may have several interpretations. First, it is possible that the conversations during service planning meetings among families served through a CPS service practice focus on case management needs that are more directly related to CPS goals such as housing security, parent training, and child placements than on addressing the caregiver's health needs. Discussions and decisions related to health services may be happening outside these meetings. Second, even if these discussions are included in PDM service practice meetings, the quality of the partnership between CPS and local health service agencies may have an impact on service use even if service providers are available in the area. In fact, (Sheehan, 2005) found a lack of partnership between adult mental health services and child welfare agencies. Quality of inter-agency collaboration was not measured in this study although we accounted for provider availability by including it as a covariate in the analytical logistic models. From the PDM framework, it seems that motivation and commitment to the joint decisions reached during service planning meetings is not enough to change caregiver health service use in this child welfare context. Perhaps mediational mechanisms such as the quality of the caseworker-caregiver relationship impact the relationship between PDM service practices and health service use.

Results from the sub-group analyses suggested that PDM service practices may have a differential effect among racial and ethnic groups. However, due to small sample size within each racial and ethnic group in the matched samples, we lacked the power to further explore the proposed hypothesis for these groups. Additional research studies that oversample these groups are needed to

further investigate a potential differential impact of participatory practices among Hispanic and Black families' use of health services.

Our findings need to be interpreted within the limitations on the study. First, our study only included public child welfare agencies and findings may not be generalizable to private agencies. We also conditioned our sample to families served by a CPS agency and whose children remained at home after an investigation. Our findings may not apply to other individuals such as children in foster care. Second, given the cross-sectional nature of this study we were not able to examine trends in PDM service practices and health service use over time. In addition, most of the measures considered in this study are based on self-reports from agency directors, caseworkers, caregivers, and youth. The validity of these measures is therefore relying on the respondents' ability to accurately recollect events and understand the survey questions at hand. In addition, NSCAW did not include self-reported survey questions at baseline on caregiver and child health service use since their contact with a CPS agency (i.e., past 6 months) or measures on the quality of the health services that families used. Our study is limited to measuring whether families used services at least once in the past year. We were not able to measure health outcomes. Finally, given the observational nature of this study there is a possibility for residual confounding from unmeasured factors such as individual preferences for health service use among families and the quality of the partnerships between CPS and health service agencies and their ability to smoothly coordinate care for families. We controlled for provider availability in an effort to address service availability.

Despite these limitations, this study used a national sample of families involved with a CPS agency, implemented propensity scores to control for selection bias, examined health service use for those caregivers and children in need of services, and further examined the impact of PDM service practices among sub-groups. Thus, by addressing an important methodological and topic gap in this line of research our study provides a worthy contribution to the child services research field.

Additional research on the health and human agency service practices that can positively impact health service use among vulnerable families should be a priority for researchers and policy leaders. In addition, other conceptual models should be explored. For example, there may be unmeasured mediational pathways between participatory practices and changes in health care use such as the

quality of the relationship between caseworker and caregiver. This line of research could greatly contribute to reducing documented inequities in health service use among many of the families served by these agencies.

CHAPTER V: CONCLUSIONS

For this dissertation, I conducted three studies (presented in Chapters II–IV) pertaining to the impact of Child Protective Service (CPS) agency characteristics on their use of community and family-based participatory practices and on whether those practices ultimately influenced caregiver and child health care use. In the first study, I found that agency factors that are associated with agency use of citizen review board and caregiver based planning/policy-making group stem from external factors such as funding and legal action respectively. The second study showed that an agency inclusion of community members in review boards was not related to caregiver inclusion in decision-making through participatory services practices. Last, the third study findings suggest that service practices that include caregivers in decision-making impact children's use of health services but they do not influence caregiver use of health services for themselves.

In this chapter, I summarize the main empirical findings of each Chapter (II–IV) and the implications of those findings. I then provide an overview of the cumulative importance of the studies' findings and suggestions for future research, the general limitations faced in this dissertation research and overall conclusions.

The first study (Chapter II) tested at the CPS agency level three characteristics as predictors of agency use of community review boards and/or caregiver-based planning/policy-making groups. The selected characteristics of service-quality oriented culture, flexibility in procedures and rules and caseworker emotional strain pertained to the CPS agency's social work environment. Findings did not support the proposed hypotheses. The selected within-agency characteristics were not associated with an agency's use of community review boards or planning groups. In fact, higher agency funding and the presence of legal action against the agency were associated with a higher likelihood of agency use of these community-based practices. Our findings were consistent with previous empirical studies suggesting that CPS agency community-based practices stem not from

within-agency conditions but from external factors such as levels of public funding (Hasenfeld & Garrow, 2012; LeRoux, 2009; McBeath, Perez Jolles, Chuang, Bunger, & Collins-Camargo, 2014).

This study's findings have two main implications. First, interest in the inclusion of community members in CPS agency boards and planning groups originated from the general public and from policy makers as a way to improve reported deficiencies in the child welfare system (Jones & Royse, 2008). In fact, child welfare legislation has tied agencies' use of community-based practices, such as review boards, to funding eligibility (Child Welfare Information Gateway., n.d.; DHHS, 2003). Thus, it is understandable that funding and consent decrees were found in our study to be the main drivers of CPS agency action. However, these findings imply that community inclusive practices may depend on the availability of those external factors over within-agency initiative. These conditions may increase the inconsistent use of these CPS agency practices. Second, our findings suggest that external pressures of public funding and legal actions are the factors more likely to influence CPS agency service practices. In this study, these practices were participatory opportunities for community members and families. These differences are likely to contribute to documented service disparities in the child welfare system. Additional research and policy attention is warranted on how shrinking budgets for public funding and the costs (human and financial) of legal action may hamper CPS agencies' efforts to consistently include community voices in policy review boards.

The second study (Chapter III) tested, at the individual level, whether caregivers served by a CPS agency that uses community review boards and/or caregiver-based policy/planning groups were more likely to be served through a participatory decision-making service practice. Our findings did not support that proposed association. Contrary to predictions from the collaborative governance framework, efforts by CPS agencies to include community members in policy review through community boards did not seem to influence agency service practices. More specifically, it did not influence whether families are included in participatory decision-making during service planning meetings. These findings are consistent with the available literature that focuses on qualitative studies. These studies have shown that community members participating in CPS agency review boards perceived a lack of agency action as a result of their input during board meetings (Cahoon Byrnes, 2002; Jones, 2004). Surprisingly, I found a significant negative association between agency

use of caregiver-based planning/policy-making groups and caregiver inclusion in participatory decision-making during service planning meetings. As discussed in Chapter III, it is possible that in general CPS agencies count on a handful of formerly served caregivers who are willing to continue their involvement with the agency as volunteers. These caregivers may be selective with their time given their personal challenges, and may perceive that their contributions to service improvement are more effective when they participate in agency governance than when they participate in the service planning meetings of currently served families. Based on the reviewed literature, no previous studies have tested the proposed associations in this dissertation chapter. However, reliance on the collaborative governance framework and evidence from other public service agencies provided support for a potential association between community-based collaborative governance and family-centered service practices in the child welfare context. Our findings imply that mere community participation in review boards and planning groups does not guarantee agency change and service improvement. There is a need for a better understanding from policy leaders and researchers of how agencies can best obtain and apply the feedback that they receive from community members, including formerly served caregivers, on how to improve services for families.

In the final study (Chapter IV), I examined whether caregivers served through a family-centered service practice were more likely to use needed health services for themselves and/or for their child compared to caregivers who were not served through this practice. Due to documented differences in the level of family risk between caregivers served and not served through a participatory decision-making service practice (Sundell & Vinnerljung, 2004), I addressed potential selection bias by using propensity scores to balance the groups on measured characteristics. Detailed descriptions of the specific service practices measured in this study and of the propensity score matching method used were provided in Chapter IV.

For the models predicting health service use among caregivers, our study findings provided no support for our hypotheses. Health service use (i.e., physical and mental health) was not significantly different between caregivers served through a participatory service practice and those who were not served through that practice during service planning meetings. For the models predicting health service use among children, this study's findings provided partial support for our hypotheses. For the

child sample, children ages 10 and younger whose families were served through a PDM service practice had a higher percentage of cases with a self-reported use of physical health services in the past 12 months ($p < 0.01$). These findings on child health service use are consistent with previous studies (Weigensberg, et al., 2009).

The findings from this dissertation's three studies have important implications for the child welfare system and in other health and human service settings. Participatory service practices seem to influence caregivers' motivation to carry out health-related decisions for their child but not for themselves. These findings imply that the relationship between caregiver decision-making and service use may be mediated by unmeasured factors such as the quality of the relationship between caseworker and caregiver. Or these results could be explained based on the nature of the caregiver involvement with a child welfare agency. More specifically, a caregiver may perceive that his/her acceptance of health services, especially mental health, may be seen by the caseworker as a confirmation that the caregiver is unfit and unable to provide a healthy and safe environment for their child. These context-related perceptions may translate into a failed service use for these caregivers.

The overarching results of this dissertation study suggest the need for additional research in how community and family-centered practices are being implemented in the child welfare context and how those practices ultimately impact families use of health-related services. Previous studies have focused mainly on describing the conditions that foster or hamper community members' participation in agency review boards. Additional empirical studies examining the influence of those boards on agency performance will move this line of research forward and better inform policy leaders and managers of the utility of these practices. In addition, the use of better measures that can more accurately capture agency action resulting from community participation in advisory boards may provide a better understanding of how these practices work in the child welfare context.

In the past decade public agencies have increasingly sub-contracted in-home services, including counseling, to private non-profit agencies (Wells, Perez Jolles, Chuang, McBeath, & Collins-Camargo, 2014). The effect of community and family participation in this context may differ and it may require different measures that can account for the different role public CPS agencies play in providing or facilitating health services when those services are subcontracted.

Overall, community and system-level factors that impact the facilitation and provision of services by human and health service agencies to vulnerable families constitute a complex area of research. There is a need to consider innovative methodologies that can better provide answers to why half of caregivers and children who are already in contact with a child welfare agency do not receive health services when needed. I am particularly interested in leading additional research projects in this line of research that consider the use of qualitative research, community-based participatory research (CBPR) and implementation science as innovative approaches to health services research.

Limitations

The conclusions reached should be interpreted in light of three limitations shared by all three studies. First, the NSCAW data only provided qualitative variables indicating the presence of community review boards, participatory decision-making service practices, and health service use. More granular measures of these constructs that capture the frequency, intensity, quality, and duration of agency practices or health services were not included in the survey. Second, our study only included public child welfare agencies and findings may not be generalizable to private agencies. Finally, given the cross-sectional nature of this study I was not able to examine trends in agency service practices and individual health service use over time. In addition, most of the measures considered in this study are based on self-reports from agency directors, caseworkers, caregivers, and youth. The validity of these measures is therefore relying on the respondents' ability to accurately recollect events and understand the survey questions at hand.

Despite these limitations, this study used a national sample of CPS public agencies and families involved with a CPS agency, implemented propensity scores to control for selection bias, examined health service use for those caregivers and children in need of services, and further examined the impact of participatory service practices among sub-groups. Thus, by addressing a relevant research topic— consumer-centered care and health care use in the child welfare context — and by incorporating important methodological procedures, I strived to fill a gap in this line of research and provide a worthy contribution to the child services research field.

Conclusion

The ability of human and health services to meet the health needs of families served, including racial and ethnic minorities, is paramount in assuring the safety, well-being, and service equity of communities in distress for two main reasons. First, child maltreatment has been linked with caregivers' untreated mental health needs, such as stress and trauma, and with the presence of physical health conditions among children, including developmental delays and diabetes (Casanueva, et al., 2008; Svensson, et al., 2013). Second, health services may not be readily available otherwise because many of these families come from areas characterized by unemployment, cultural isolation and an inadequate safety net of services such as public hospitals and community health centers (Chow, et al., 2003; Landsverk, et al., 2002).

Evidence on the CPS agency services practices that can best meet the health needs for these families is still lacking. This dissertation research set out to fill a gap in research by applying conceptual frameworks to support an examination of community and family-based approaches to policy review and service practices and by implementing methods to address limitations in previous research.

What I have learned from national data on public child protective service agencies, controlling for observed selection bias, was that participatory service practices are linked to a higher likelihood of health care service use by children, but not by their caregivers. I also found that there is no association between community member involvement in agency review boards and caregiver inclusion in participatory decision-making during service planning, and that the predictors of an agency's inclusion of community members in review boards and planning/policy groups are the external factors of public funding and consent decrees. Additional studies on the type of community and family participation that is more likely to improve health services for families served by human agency service practices should continue to be a priority for researchers and policy leaders.

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